PICTURED KNOWLEDGE

"IN THE PAGES OF GOOD BOOKS
LIES THE MAGIC TO INSPIRE OUR
DREAMS AND THE POWER TO MAKE
THOSE DREAMS COME TRUE"

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PICTURED KNOWLEDGE

THE NEW METHOD OF
VISUAL INSTRUCTION APPLIED TO
ALL SCHOOL SUBJECTS

Dedicated to Our Boys and Girls

VOL. VIII

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The People of the United States and Their Welfare

FROM the beginning of its history in the thirteen English colonies, our country has had a mixed population. English Puritans, Quakers and Cavaliers; Scotch, Scotch-Irish and Irish Catholics; Welsh, Dutch, Belgians, Swedes, Germans, and French Huguenots were all in America, in varying numbers, before 1700.

They differed widely in language, manners, customs and religious beliefs, but within the short period of a century and a half they had become so far united in feeling and interests that they formed a new nation, with a clear and original political ideal.

We are apt to think that this is a new thing in history. It is not. The greatest of all the ancient empires were peopled by mixed nationalities and even races. Venice and Genoa, in Columbus' day, had as many varieties of foreigners as London, New York and Chicago have today. The people of England are a mixture of ancient Britons and Celts with Romans, Anglo-Saxons, Norse, Danes and Norman French. Several centuries have been needed to blend all these various elements into English men. So "Americans" have become a distinct people, quite unlike any people of the countries of their ancestry. And our characteristics are probably not fixed, for new nationalities are still coming and being absorbed into our national life.

All for the Children

As you are approaching the beautiful pillared temple shown in the next picture, you would see from the sculptured groups on either side of the main entrance that it had something to do with children, and then when you notice they are all happily engaged in learning about things, you would suspect the whole truth—that it is all devoted to the work of the schools of the state. This group of little people is in bronze and they are all seated around a capital of one of the Egyptian patterns as you can see by the locust leaves. Above the pillar stands a circle of solemn owls signifying wisdom.

Within the half century from 1790 to 1840, our country grew in population from three to seventeen million. Large fami-

A Great Temple of Education

One of the very greatest things that the United States have done both individually and in their united form as one country, has been to develop the public school system. And the great empire state, New York, has lead them all in the beautiful building shown here, which is the center of all the education activities conducted by the state. This is the State Education Building at Albany. It is the headquarters of the State Department of Visual Instruction and all the other educational activities maintained by the state. It is built in the style of a Greek temple with its magnificent rows of columns.

lies were the rule in pioneer days, but there was also a steady stream of newcomers, chiefly from England, Ireland and Germany. Entering through Boston, New York, and Philadelphia, they were soon well distributed among the older colonial population; and being of the same national stocks as the people already here, they very quickly became good and useful citizens. In the frontier village of New Salem, Illinois, where Lincoln studied law in the thirties, there was a Scotch schoolmaster, a French doctor, a German cooper and miller, and an Irish "gentleman" who loaned him copies of Burns and Shakespeare. This was a typical pioneer settlement.

Famine in Ireland in 1846, and revolution in several of the states of Germany, caused still larger waves of migration from those countries to break upon our shores. Between 1840 and 1860 the population was almost doubled. In the third quarter of the nineteenth century, German and Irish immigrants did our hardest work. They dug the canals, graded the early railroads, built the levees of the Mississippi, and constructed our first great bridges. They manned the multiplying factories, cleared the farming lands of new western states, worked in all the skilled trades, and opened new shops and stores in towns and cities. They built churches, appeared in the learned professions and in politics, and formed entire regiments to

The Waves of Immigration

fight for the Union in the war between the States.

What Foreign Peoples Bring Us

Then, for a score of years after 1870, most of the new arrivals were from Norway, Sweden and Holland. These sturdy farmers of North Europe poured into the forest and lake country of Michigan, Wisconsin and Minnesota, and spread westward across the prairies of the Northwest, multiplying our corn and wheat fields, orchards, gardens, and pastures for dairy cattle. Except for the Negroes who were brought in for slaves, a few Polish, Bohemian and Jewish exiles in the larger cities, and the Chinese who swarmed into California in gold-fever days, practically all our immigrants, from 1607 to 1890, were from the enlightened countries of Northern Europe. Vigorous, venturesome and of keen intelligence, they were marked by the pioneer spirit, by nervous energy and a many-sided genius.

Inferior Types of Immigrants

Since that date, however, hordes of strange peoples have poured in upon us from Italy, and from the backward countries of Southeastern Europe—the many nationalities of Austria-Hungary and the Balkan States; Poles, Greeks, Russian Jews, and even Armenians and Syrians from Asia Minor. These people are mostly illiterate and unskiled, and entirely alien to our language, customs, and political institutions; but all are eager to improve their worth and fortunes, and each has some special virtue—patience, sympathy, imagination or reverence for Art, to modify our sterner qualities, and to give color and softness to our national life. Willing to do our hardest work, we find the strong peasantry of country districts in the coal and iron mines, the stone quarries, steel mills, packing houses and railroad camps. The physically weaker, but mentally more alert, people from the crowded slums of foreign cities, find work for their nimble fingers in clothing, box and canning factories. We see them, too, peddling fruits and vegetables from wagons and push carts, and shining shoes. Those who prosper very soon own fruit stands, pawn shops, tailor shops, and barber shops and second-hand clothing stores.

Immigrants Who Are Barred Out

The conditions of their work tend to keep these people isolated in racial groups, in mining and factory towns, and in the poor quarters of the large cities. But the children are quickly gathered into the public schools, and many of the second generation become a part of the general population. This process is going on all the time. But while our country was founded as an asylum for the poor and oppressed of all lands, we admit no alien who would endanger our free institutions or who would be liable to become a public charge. This excludes the insane, the feeble-minded, those with incurable or contagious diseases, the man with a criminal record, the pauper family, and the children and old people without responsible guardians. Chinese coolies, or common laborers, who work so cheap that they lower the wages and the standard of living of American workmen, are not allowed to come in, and, for the same reason, we have an agreement with the government of Japan not to permit the migration of Japanese coolies to this country.

From 1900 to 1910 a million new

people entered the United States every year. Then the number began to decline, and during the great European War, which began in 1914, more aliens left our country, to serve in various foreign armies, than came into it. Until an immigrant becomes a naturalized citizen of the United States, you know, he owes allegiance to his native land.

One of the Doctors on Guard at the Ports

You can see by the badge on his cap that this man with the fine, strong face is working for Uncle Sam; and so, of course, for all the rest of us. He is a doctor by profession and is one of the medical inspectors at the port of New York who sees to the enforcement of the quarantine and laws.

In 1915 the United States had a population estimated at one hundred million. At least one-sixth of this number were foreign born, and fully one-half were of recent foreign ancestry. Twenty-six million immigrants had entered the country since 1790. Not more than one-tenth of our people of today are descended from the patriots who won our liberties in the Revolutionary War. An equal number of our citizens are descended from the negroes who, a half century ago, were held in slavery. The native Indians who decreased in the two centuries of Indian wars, are now increasing slowly, and number over a quarter of a million.

Making One People of Many

While there have been such mixed populations in other historic times and places, never before were so many and such various peoples so quickly blended into one nation. A large part of this result is due to our republican institutions—to our political equality, religious tolerance, lack of class distinctions which has permitted the freest social intercourse, and universal, free education in a common language. But we must not forget that, never before in the history of the world, were travel, trade and communication so rapid, easy and cheap as in this age of the steamboat, railroad, telegraph and postal service. For all practical purposes our big country is smaller than it was a century ago. The journey from New York to San Francisco can now be made with greater ease and comfort and at less expenditure of money and time, than the trip from Boston to Philadelphia in Revolutionary days.

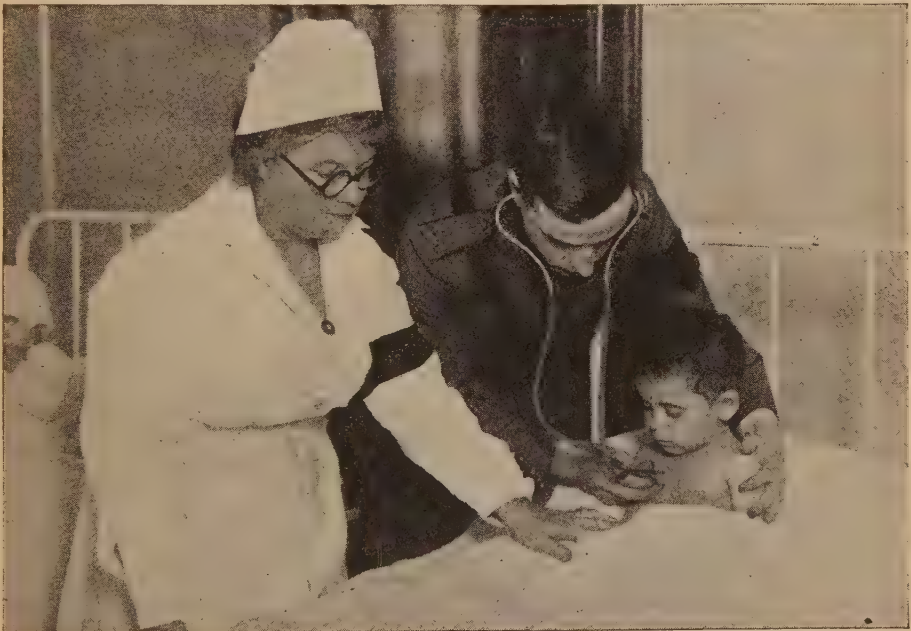
Promoting the General Welfare

The Nation's Duty to Its Citizens

And then this is an age in which all progressive governments have a function of social service toward their citizens. In old times there was a kind hearted king of France who wished that every family in his dominion had a fat chicken for their Sunday dinner. But it did not occur to him that he could do anything toward making his people more prosperous. The wise and patriotic men who founded our gov-

Waiting for Mother at Quarantine

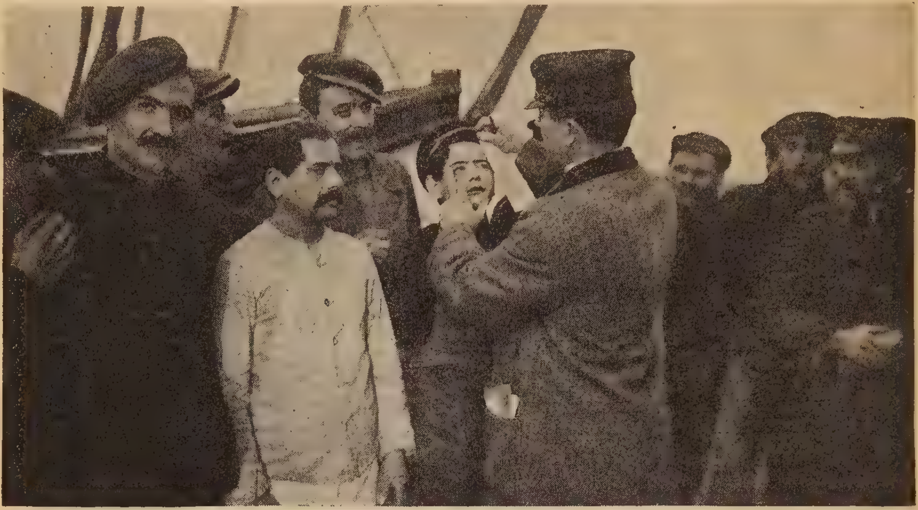
These immigrant children, two little brothers and pretty baby sister, are waiting, and watching the family baggage at quarantine, while their mother is being examined.



© *Keystone View*

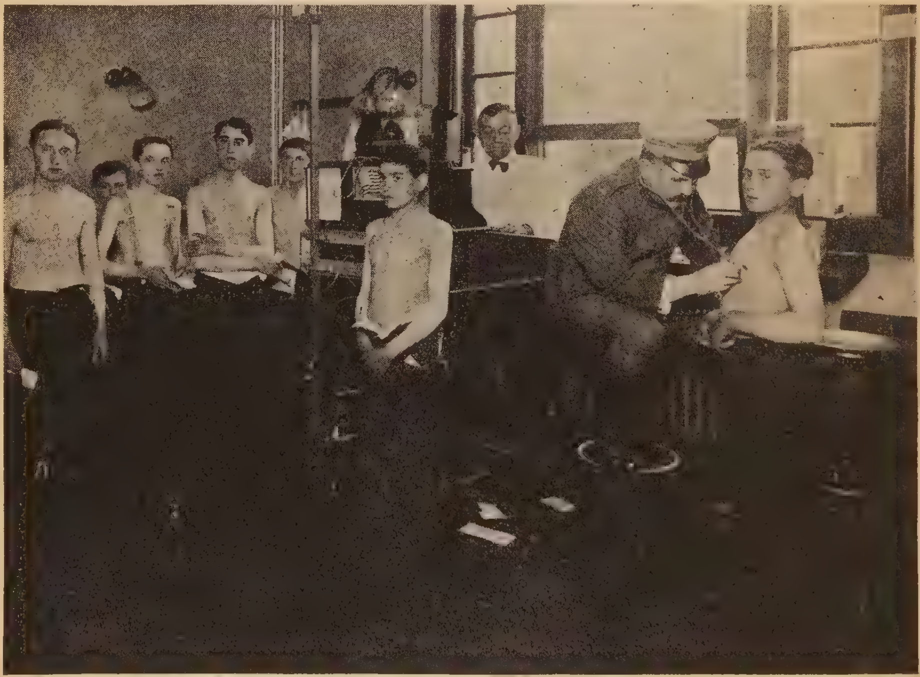
This little immigrant boy is being examined in the hospital at Ellis Island. Our Government is very careful not to allow anyone to enter the United States unless they are in good health.

The Doctor-Inspector Examining the Boy's Eyes



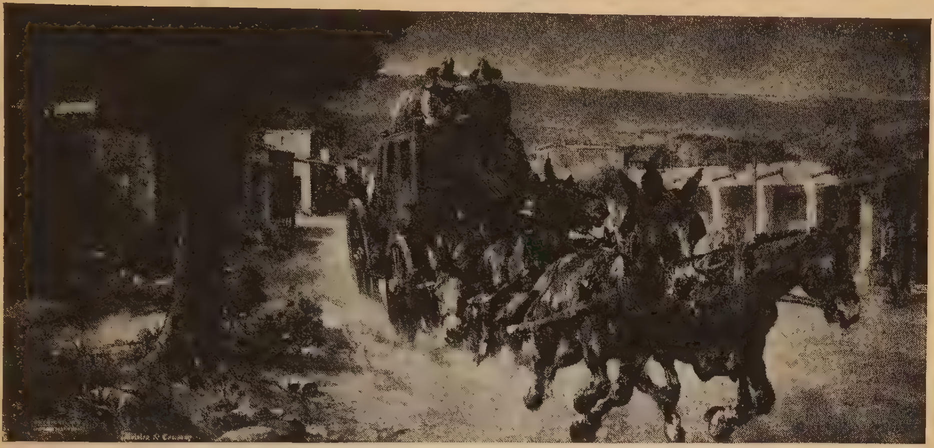
Here one of the doctor-inspectors is examining a boy's eyes. By such an examination the inspector can not only tell if there is any disease of the eyes but the condition of the eyes is also an indication as to serious diseases of the rest of the body. You notice how the immigrant back of the boy is smiling. He has probably made some joking remark to reassure the little fellow who seems to be somewhat apprehensive as to what is going to be done to him.

Using the Stethoscope on an Immigrant Boy



Here you see a medical inspector in the port of New York listening to the action of the heart and lungs of an immigrant lad who has just arrived. He is such a fine, sturdy-looking youngster that probably the doctor's report will be favorable and the boy will come to be a useful American citizen.

The First United States Stage Entering El Paso



Painted by Edwin J. Holslag © *Edwin J. Holslag Co.*

Before the days of railroads in the Far West, mail and passengers were carried from place to place in stage coaches drawn by several teams of mules or horses. This picture shows the first United States stage entering El Paso. You notice that the men on the driver's box wear tall pointed hats with broad rims, like the Mexicans, because this is a hot climate and hats of this kind are the most comfortable. El Paso, you know, is the northwestern gateway into Mexico. The population is quite mixed, including many Mexicans, Indians, and half-breeds. Five great railway lines now center here.

ernment were among the first in the world to consider it the duty of rulers to do everything possible to improve the general standard of living and the well-being of all the people. In the first paragraph of the Constitution they gave, as one of the reasons for forming a Union of the States, the purpose *to promote the general welfare.*

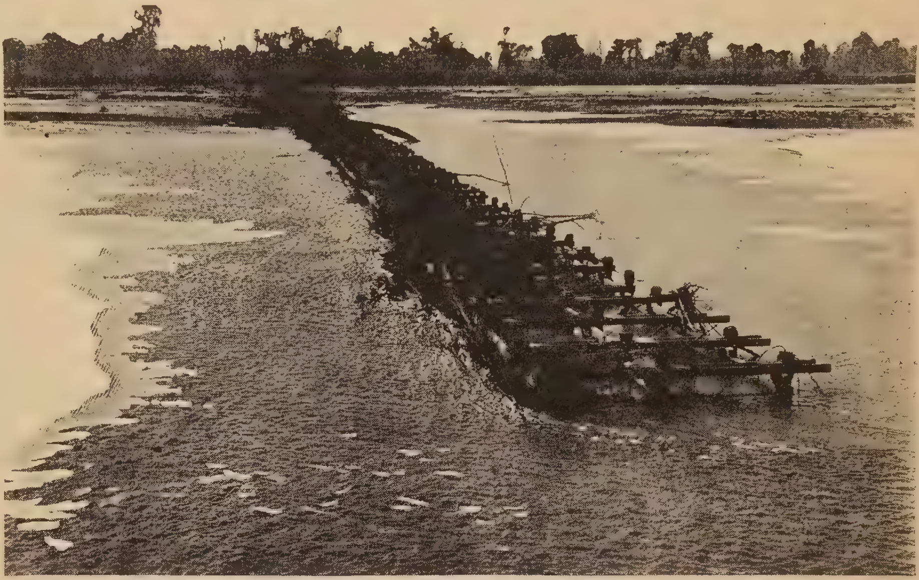
The first thing done under this power, was to extend and perfect the postal service. President Washington had a small cabinet of only five members. These were secretaries of State, the Treasury, War, and the Navy. The fifth member was the Postmaster-General. Nothing was thought to be of more importance than cheap and easy communication between the people of every part of the country. This, it was wisely foreseen, would encourage education, facilitate business, and create common interests that would serve to knit the people closer together.

Beginnings of the Postal System

This idea was not new. A colonial postal system, of a sort, was in operation very early. In every seaport, bags of mail were entrusted to ship captains, who, for stated fees, delivered them to banks or business houses in London. Every business man and planter in the colonies had his London agent. Neither the colonial nor the home government was in any way responsible for the safe transmission of mails. Important letters were sent by private messenger. The common people did not write or receive letters at all, and so lost all trace of relatives and friends in the Old World, and of those in other colonies. It was not until 1753 that Benjamin Franklin undertook to organize a system of post offices and mail routes for the American Colonies. By boat and carriage and on horseback he travelled from Boston to Charleston. He

Sending Letters in the Old Days

One Way of Preventing Floods



This shows one of the ways by which the Government reduces the number of floods in the Mississippi. The river is constantly carrying down branches of trees and twigs and even whole trees that have fallen into it from its banks. This material if allowed to accumulate in the bottom of the river, checks the flow of water and so increases floods. Accordingly, frame structures like that shown here were built out into the streams which catch this material and so permit it to be removed.

established seventy-five central post offices, fixed proper rates and appointed postmasters and mail carriers.

The Revolutionary War interrupted this work. In 1790 there were still only seventy-five post offices to serve the needs of three million people who were hungry for news of their friends, and of the large affairs of their new republic and of the world. But by 1800 the President and his Postmaster-General and Congress, working together, had increased the number to nine hundred. There were twenty-three hundred post offices in the country when Lincoln was born in 1809. Did you fully realize what this wonderful service of our government means to us today, before you had read our story, "The Magical Powers of a Postage Stamp"?

Improvements of the Waterways

The next general welfare work undertaken was to make travel and trade safer. Since the harbors and navigable rivers were necessary to national defense, the federal government assumed all rights over them and charged itself with their improvement. It deepened channels, built jetties and breakwaters and erected lighthouses. Although known to the ancient empires around the Mediterranean Sea, these safeguards were new in the modern world. In 1800 there were only twenty-five lighthouses around the dangerous coasts of the British Isles The American Colonies, in 1790, had nothing more than beacon lights on the points of land and hilltops overlooking harbors. That is how Beacon Hill, Boston, got its name.

The United States government

The Old Erie Canal Today

The Erie Canal which had so much to do with the development of our country, is still in existence and performing invaluable service in the cheap carriage of freight. All the canals in New York state have now been united into one system called the State Barge Canal, and the Erie is part of this system. The illustration shows one end of what is known as the crescent dam on the Erie during the spring flood. You see the dam practically keeps the water back so that there will be plenty for the operation of the canal, but in times of flood the water rises until it comes to these openings in the dam and then it is allowed to pass through; otherwise the adjoining country would be flooded.

soon began the erection of low towers, on enclosed bays and straits to guide ships into harbors. Then it built higher and higher ones, on rocks and shoals some distance out from the mainland. With the invention of the Argand lamp in France, Army and Navy engineers were set to work to solve the problems of building lighthouses two hundred feet high, and strong enough to withstand the force of waves and tides and storm winds. Lamps and reflectors were enlarged and improved until warning rays could be sent to ships sixteen miles out at sea.

The Building of the Lighthouses

The number of shipwrecks near our coasts were reduced year after year. But when a vessel did go aground there was still loss of life. So, in 1871, the life saving service was established. A total of three hundred stations have now been strung along our ten thousand miles of ocean and lake shores, one for every thirty-three miles. They are all connected by telephone and telegraph, and coast guards patrol every mile, night and day. Provided with signals and with every means for reaching ships in distress, they save more than a thousand people from shipwreck every year.

Federal Aid for Schools

Education is one of the things that is thought by most people to have been left wholly to the States. It is true that the Federal Constitution made no specific provision for education. But under that power "to promote the general welfare," it has encouraged education, made large contributions to it and influenced its character. It established and supports the military and naval academies. And when a public domain was created in the Northwest Territory, the government set aside one section or 640 acres of land, out of every township of sixteen sections, as an endowment for a public school. Two entire townships in each of the states of Ohio, Indiana, Illinois, Michigan, and Wisconsin were reserved for founding a state university.

Public Lands for Public Schools

This was the first time in history that public lands were donated to education, and it enormously stimulated the establishment of free public schools in old states and new. As the state universities of the West were built, the government made further donations of public lands. By 1889 its gifts to higher education amounted to twenty thousand square miles of land, worth five million dollars. Only with this generous aid could the universities of the middle and far western states have been so rapidly built up to rank with the old endowed universities of the East. And they set new standards. Supported directly by state taxes they were obliged to respond to the practical needs of the people. In order to hold their own in competition the colleges and universities of the East have had to change their methods and broaden their fields of work.

Uncle Sam as a Schoolmaster

The government has, besides, established colleges of agriculture, mining and mechanical engineering in western territories, in advance of their admission as states. It has built and maintained schools on the Indian reservations, and Carlisle Indian College. Through the Freedman's Bureau it began the work of educating the Negroes, in reconstruction days in the South. It established the public school system of Cuba, Porto Rico and the Philippine Islands, and supports free schools for the children of employes in the Panama Canal Zone. Some day there will be a National University in Washington. Our first president recommended that it be built, in his message to Congress in 1796. While nothing has been done as yet, the project has not been forgotten. It is intended that this should be a post-graduate institution, where eminent scholars may have the free use of the national museums, libraries, and scientific departments of the government.

Many kinds of welfare work, on a scale undreamed of by other equally progressive countries, have been possible in the United States because of the vast extent of our public domain. The purchase of Louisiana, and of territory owned by Spain, Mexico and Russia, gave to the Federal government, Alaska and all the land west of the Mississippi. Until settled and developed, this wilderness had no value. To encourage emigration westward, public lands have been sold to actual settlers for nominal prices, and the purchase money used for local improvements.

Land Grants to Railroads

By 1830 there were fifteen thousand miles of roads and canals in use in the Middle West that were built with federal aid. Then land

Indian Girls Learning to Sew

© *Underwood & Underwood*

This is one of the rooms in the famous Indian School at Carlisle, Pa., where Uncle Sam teaches his Indian wards how to become good and useful citizens. The girls you see here are all Indians and they are learning plain sewing.

grants were made to early railroads. For quite forty years every railroad that opened up a new region was a costly experiment. Without the help of the government the development of rapid transportation and the settlement of the Far West must long have been delayed. Before 1860 Congress had given to railroad companies an area of land larger than the original thirteen states. The largest grants of all were made to the Union and Central Pacific roads which connected San Francisco with the Missouri River at Omaha. Beside a cash bonus of $55,000,000, these roads were given every other section of land in a strip twenty miles wide on both sides of their nineteen hundred miles of track.

Much of this mountain and desert land had no value, but the mineral and timber tracts, fertile valleys and town sites have repaid the cost of the first transcontinental railroad many times over. This enormous grant was the last to be made to a railroad corporation. By 1870 population was increasing so rapidly that the people demanded that all the remaining public lands should be allotted to actual settlers, and as mining and timber claims.

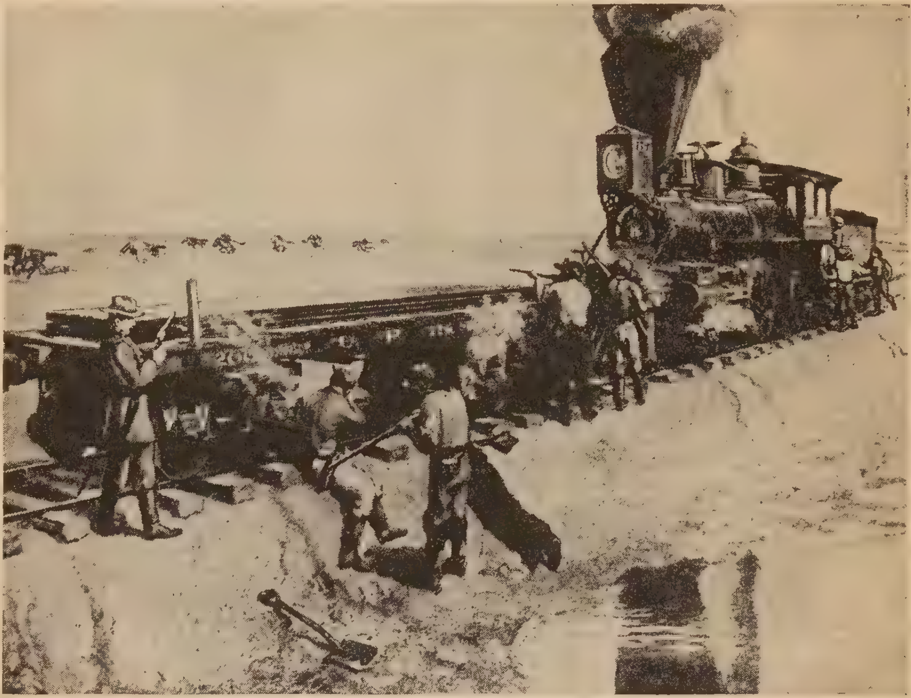
Giving Homes to the People

Earning One of Uncle Sam's Farms

The first homestead act was passed by Congress in 1862. This provided that any head of a family, or citizen over twenty-one years of age, could secure one hundred and sixty acres of land for a home. All he had to do was to file a claim with the government, live on the place for five years, pay fees amounting to a dollar and a quarter an acre, and make certain improvements in buildings, fences and the planting of crops.

Under this law one hundred and three thousand "homesteaders" settled millions of acres of wild forest and prairie by 1870. Then western railroads opened their land grants to homesteaders at about twice the price of government land. As In-

Building the Railroad and Fighting Indians



This shows one of the ways in which Uncle Sam helped to build the Union Pacific Railroad. He not only helped the roads by land grants, but supplied soldiers who helped build the railroad, and also fought off the Indians as you see them doing here. The Indians were determined to rid their country of these men who were spoiling their hunting grounds and killing the buffalo for food. Most of the men who helped with this work were soldiers who had fought in the Civil War, and many whole companies together with their commanders went West for this purpose.

dian tribes diminished in numbers, their reservations in well settled states were exchanged for other lands where game was more plentiful. These, too, were opened to settlement as fast as they were acquired.

The Great Irrigation Works

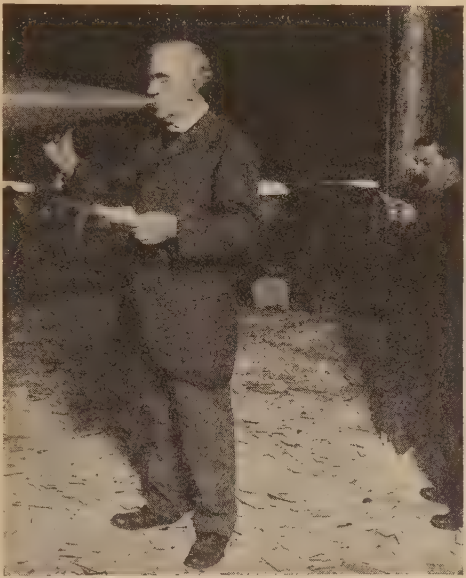
Making the Desert Bring Forth

By 1890 most of the good public lands suitable for farming had been taken up. But on the dry plains and the mountain plateaus of the Far West, there were still one hundred million acres of dry land that needed only water to make them fertile. In the geography article on the Rocky Mountain States, we tell you how the government is reclaiming large tracts of this dry land by constructing great dams, tunnels, aqueducts over canyons, and networks of canals in irrigation works. The first project was not under way until 1902, but already two million acres of desert have been turned into green orchards, gardens, alfalfa and grain fields. In time there will be country homes here for ten million people. A charge of twenty-five dollars an acre is made for these lands, to return the cost of reclamation to the government. Settlers, however, are allowed ten years' time to complete the payments for their homesteads and for their share in irrigation works which farming communities will own and control when these payments are completed.

Other Great Public Enterprises

In the same regions the government is saving the forests on the mountain slopes and other public lands. We have a special story about that in Pictured Knowledge. We also tell you of the many ways in which the United States Agricultural Department helps the farmer in his business. And in "The Harvest of the Sea" we explain the nation-wide systematic work of restocking the sea, rivers and lakes with food fishes. All this practical service is given freely, so the people can have more and better food, clothing, houses and furniture at less cost, and so the United States can support a greater number of people in comfort. To make trade easier and cheaper between the Atlantic and Pacific coasts the government dug the Panama Canal at a cost of hundreds of millions of dollars. It has laid ocean cables to our distant island possessions, strung telegraph wires all over Alaska, opened mail routes to the Arctic Ocean, and the building of the Central Alaska railroad means the opening up of the copper and coal mines and the good farming lands of the Yukon Valley and their connection with markets.

Announcing the Highest Bidder



© *Brown Bros.*

This is a scene at a sale of government land. One of the government officers is calling out the names of those to whom land has been sold because they are the highest bidders. He is speaking through a megaphone because there is a very large crowd present—the people who have sent in their bids. These bids must be in writing and a large number of them are sent in by mail as you can see by the envelopes all over the floor.

When the government has decided to open up lands for sale they make a list of them with their exact location and a brief description of the character of each piece of land. For instance, one piece is described as "smooth pasture land all tillable." Another, "rolling, rocky timber land," etc. Opposite the description of each piece is given the lowest price that will be accepted. Then the land is sold to the highest bidder. All bids must be in writing and accompanied by a certified check for the amount of the bid. All checks lower than the highest bid are returned.

Our country has a care, too, for things of interest and beauty, as well as the useful. It has reserved vast tracts of wild wonders in the national parks for public play grounds, and there it protects the native wild animals, birds and plants that are disappearing elsewhere. It has set aside natural monuments, historic battlegrounds, and prehistoric remains of the cliff and mound builders; and it has established winter refuges on islands along the Gulf Coast for our wild song birds. And our government secured the co-operation of Great Britain and Japan in the work of protecting the fur seal in their summer rookeries on Pribilof Islands. Every summer swift revenue cutters patrol

Behring Sea to stop the illegal hunting that threatened to exterminate these harmless fur-bearing animals.

Protection Against Disease

And do you know about the ceaseless vigilance of our government in protecting public health? The states and cities do all the local work in this field, but the authority of the United States extends three miles out at sea, all around our coasts. Ships used to come and go between our own and foreign seaports much as they pleased. They often brought in dreadful contagious diseases, and spread epidemics of smallpox and yellow fever. To close our harbors to ships from infected tropic ports interfered seriously with travel and trade; and this was unfair to vessels that were free from disease. So the government undertook to have health officers meet and inspect all incoming ships. No vessel is permitted to land goods, passengers or crews until it has been given a bill of health. Immigrants are landed first on Ellis Island, New York Harbor, and at similar receiving stations in other ports of entry; and the sick are isolated in hospitals until they are well again.

Rats are known to spread the bubonic plague, a dreadful contagious disease of Oriental countries, so the rodents are hunted out of docks, piers and warehouses. And they are prevented from coming ashore from ships by

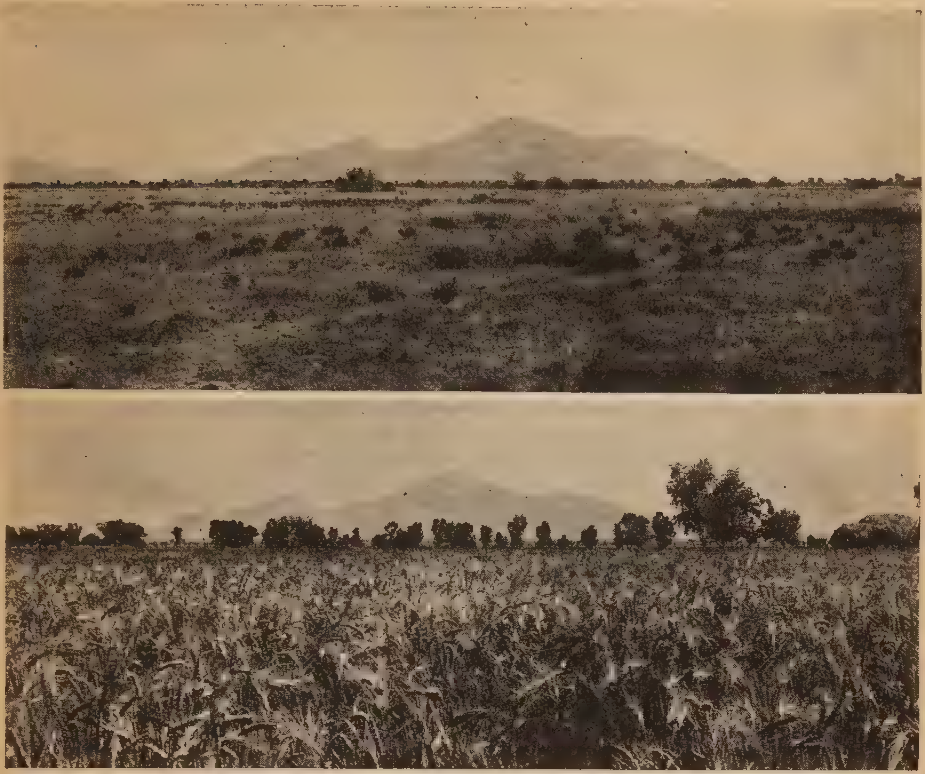
A Homestead in the Timber

Here is a picturesque little place on the timber lands where the Government gives to those who comply with the conditions. These houses, unlike that of the woman homesteader of the prairie, were built of logs because there is plenty of material for such houses here, while the Dakota plains are treeless. You see the people here have made a good many improvements and, besides their picturesque little home, have a poultry yard and an additional building in the rear where they evidently do their washing, as you can see the clothes hanging on the line.

A Woman Homesteader's Home

Of course, a great many more men than women avail themselves of the homestead law to secure a farm from Uncle Sam. This picture shows the house a woman homesteader had built when she took up a piece of land in North Dakota. In spite of the fact that it is a lonesome place, she looks quite comfortable and content and is looking forward to the time when she will have a fine piece of land that is all her own, and besides she has women neighbors—although a good many miles away—who, like herself, have taken up claims.

When the Desert Gets a Drink

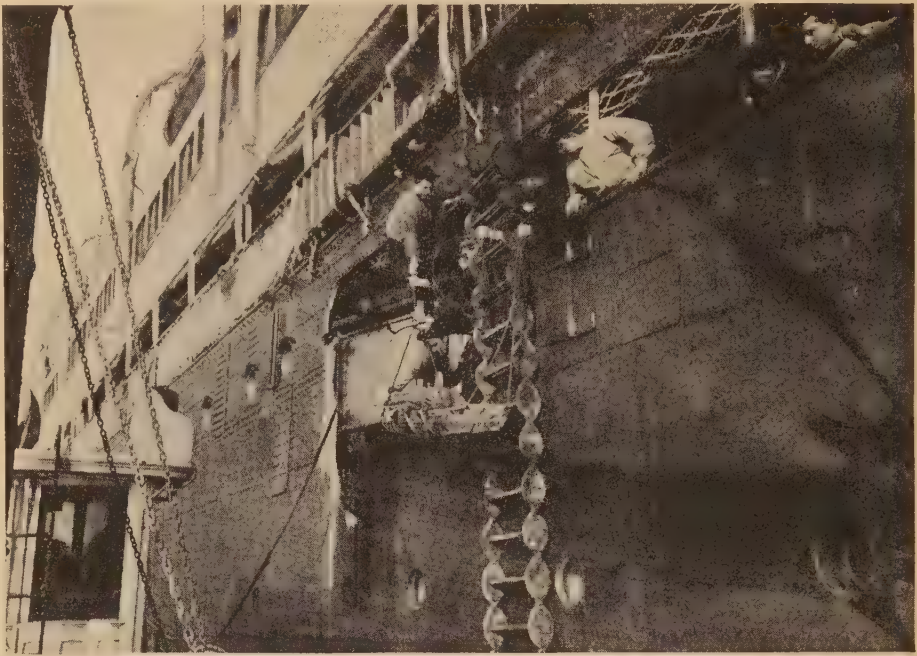


The very same mountains you see, the very same wide plains in both pictures—but what a difference. The first picture is a scene in the desert, for only sage brush and the toughest of desert grasses can get a foothold here and there. But the soil, nevertheless is very rich, and soon as irrigation has been applied, presto! up spring the fields of golden grain. Such heads of wheat! Notice how they bend down the straw by their weight. To the right across the field there is a big stack of wheat and not far away, no doubt, is a farm house and cattle where they have lots of good things to eat, and happy little children play in the sunshine.

stringing big, round, steel plates on the cables which tie vessels to their docks. The government cleaned up Havana, after the Spanish-American War, and stopped the epidemics of yellow, typhoid and typhus fevers which annually ravaged that semi-tropic city. It cleaned Panama and Colon, and made war on the malaria mosquito which infested the Canal Zone. Thus it gave to our states, cities, towns and farming communities valuable object lessons on the principles of sanitation. The entire country has learned the necessity for cleanliness, scientific sewage systems and pure drinking water; and the dangers to public health of dirt, cesspools, rats, flies and mosquitoes.

Government inspectors enforce sanitary laws in packing houses, bakeries, creameries, fruit, fish and vegetable canning factories; sugar, starch, flour and cereal mills—every kind of food manufactory that engages in interstate commerce. Federal pure food laws provide penalties against impurities and adulterations in food, and against the use of harmful preservatives and coloring matter. Local health authorities fol-

Lowering a Typhoid Sufferer from an Ocean Liner



This is a scene in New York harbor where an immigrant on one of the big ocean liners which has just arrived, is suffering from typhoid fever. The passenger will be taken to a public hospital and given attention until he is able to be about.

low this example and inspect dairy cows, milk, food markets and cold storage warehouses. And the lesson has been impressed upon housekeepers to keep their cellars, kitchens and refrigerators clean, to keep garbage cans covered and to exterminate the house fly.

Co-operation with Cities and States

Much of the welfare work of our government is educative. It is surprising to discover in how many ways, without interference with individual liberty or with state's rights, federal activities enter into the every day life of the people. It investigates everything that affects the general welfare, makes reports, recommends where it has no authority to act directly, and sets all sorts of helpful public work in motion. Sometimes, however, progressive cities and states lead the way with reforms, and the government follows and completes them. The states tried to regulate railroad freight and passenger rates, but endless confusion resulted with injustice to both the public and the owners of the roads. So the Federal Congress, having jurisdiction over interstate commerce, appointed a commission to fix rates.

Helping to Protect the Children

The cities and states, too, began the work of caring for the children. Education has gradually been made compulsory in almost all states. People are prosecuted for abusing or corrupting children, and the age at which they may be employed has been slowly raised until, in many

All Ready for the Rush

The keen-eyed young men you see in line back of the table, are all newspaper men, the Washington correspondents of as many papers throughout the country. They have in their hands the cotton census report and are ready to rush with it to the telegraph office as soon as the Government officials give the word. Information as to crop conditions is very carefully guarded by the Government until it is ready to give out, because these reports affect the market, and prices go up if the report indicates a crop yield less than was expected, so you see it wouldn't do to let one person get this information ahead of another.

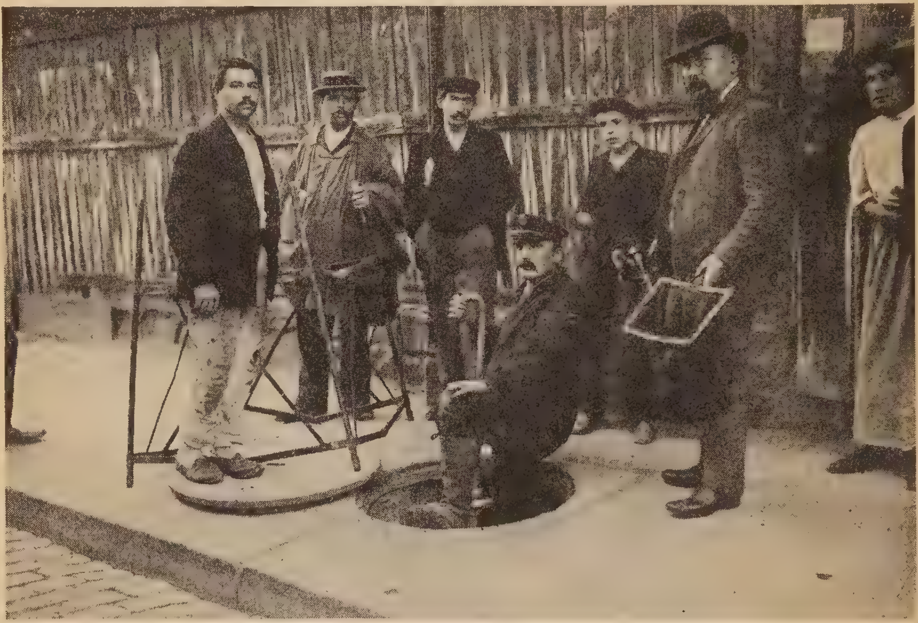
states, it is now sixteen years. Public playgrounds and juvenile courts have been established in many cities; the authorities are especially watchful of the health of babies, and the states are maintaining state public schools and finding homes for orphaned and other dependent children. It was not until 1912, however, that the government established the Child Welfare Bureau, as a branch of the Department of Commerce and Labor. We have a little story in these books telling about the duties of this bureau. A Federal Child Labor Law was passed, but was declared unconstitutional. This interfered with no state law, but it would have released thousands of children from working in coal mines, cotton mills and canneries, simply by forbidding the shipment of goods produced by the aid of children in interstate commerce. Thus backward states would be brought in line with the most progressive in the proper treatment of their children.

Work Yet to Be Done

What next? No one knows, but it will be whatever the people want to have done. By reading the best newspapers and current events magazines, you will find discussions of many things that are advocated by various organizations. It is widely held that the government should take steps to Americanize the immigrants who are coming to us. Cities have opened night schools to educate them; and the function of the Immigration Officers might well be enlarged to help the newcomer to prosperity and useful citizenship.

Many people think that the government should continue the war-time operation of the railroads and telegraph lines; and that it should undertake great engineering works to control the floods of the Ohio, Missouri and Mississippi rivers. And along the Atlantic and Gulf Coast, in Florida and on the lower Mississippi, are vast areas of swamp lands that could be reclaimed, by extensive drainage works which only a rich country could finance. There is a growing demand, too, that the water power, oil fields and mineral tracts on public lands should be reserved in the interests of all the people, as are the forests. And as the government helped the early railroads, it was thought by many that it should help build, or rather, rebuild, our merchant marine. The fact that our sea-borne commerce before the war was carried in the ships of other nations placed our foreign trade at a disadvantage.

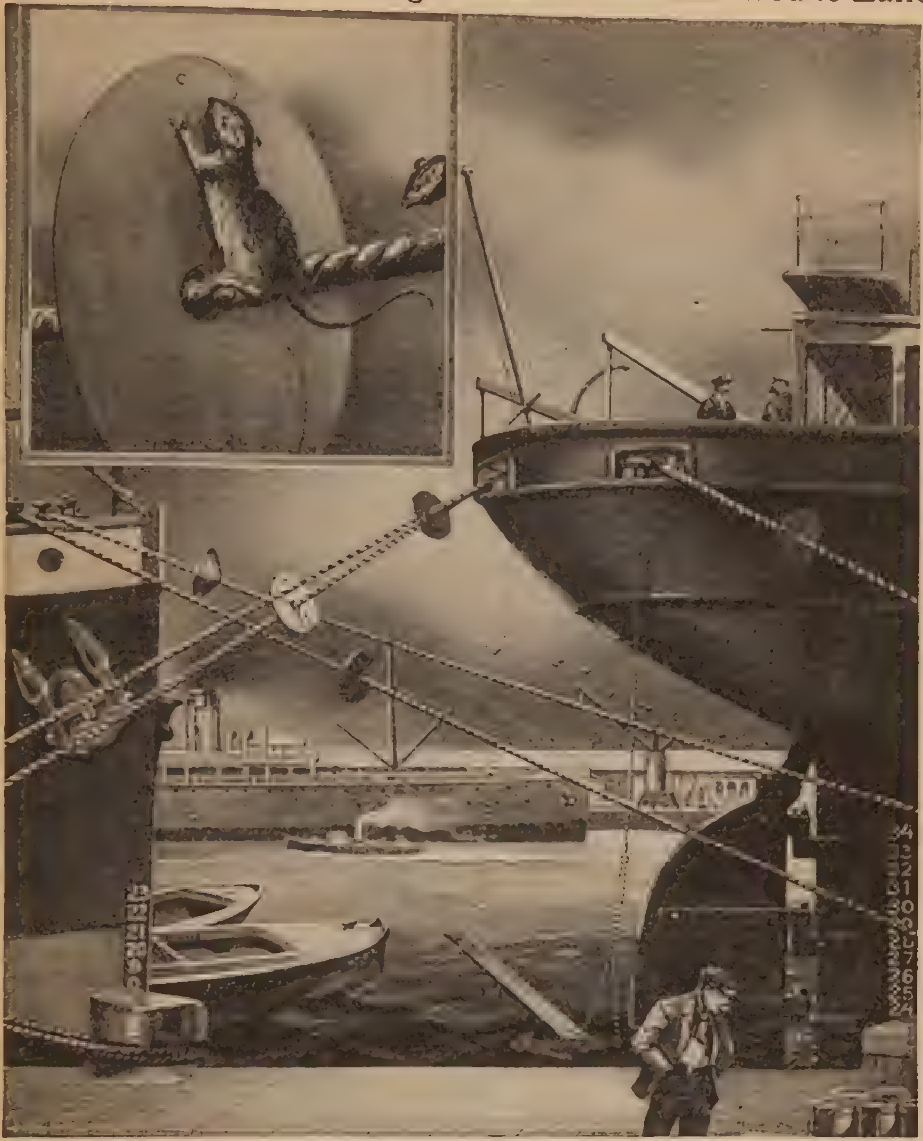
The Famous Rat Catchers of Paris



The rat catchers of Paris are famous. They work in the sewers which run under the city everywhere and are the favorite haunts for these disease-spreading animals. So there are officials employed by the city as you can see by the official cap of the man in the picture. He is just going down into the manhole. One foot is resting on the rung of the iron ladder that is attached to the walls of the manhole. He has high hobnailed boots, because the bottom of the sewers are slippery with water and slime. The man behind him is holding the dark lantern and the bag in which he puts the rats. With this dark lantern he explores the walls of the sewers and when he sees a rat he grasps him by the back of the neck and whisk, he goes into the bag which is swung from his shoulder by a strap and the mouth kept closed. These rat catchers work in shifts day and night. Fifteen rats is a good night's work, while when he catches twenty-five, the rat catcher says he has had a "good luck night"—or day, as the case may be. The rat catcher has a peculiar whistle which for some reason calls the rats to come out; possibly out of curiosity. He also carries pockets full of white pebbles which he throws against the wall in such a way that they bound back toward him. This often makes the rats come out from their hiding place and when they see the pebbles they run toward them. Just why the rat does this is not known, but the rat catcher thinks it is because the rat imagines it is a piece of white sugar, for he calls it his "sugar trick."

It would be an interesting thing for your history class in school to think over and discuss the many ways in which the government might still further "promote the

An Objectionable Passenger Who Is Not Allowed to Land

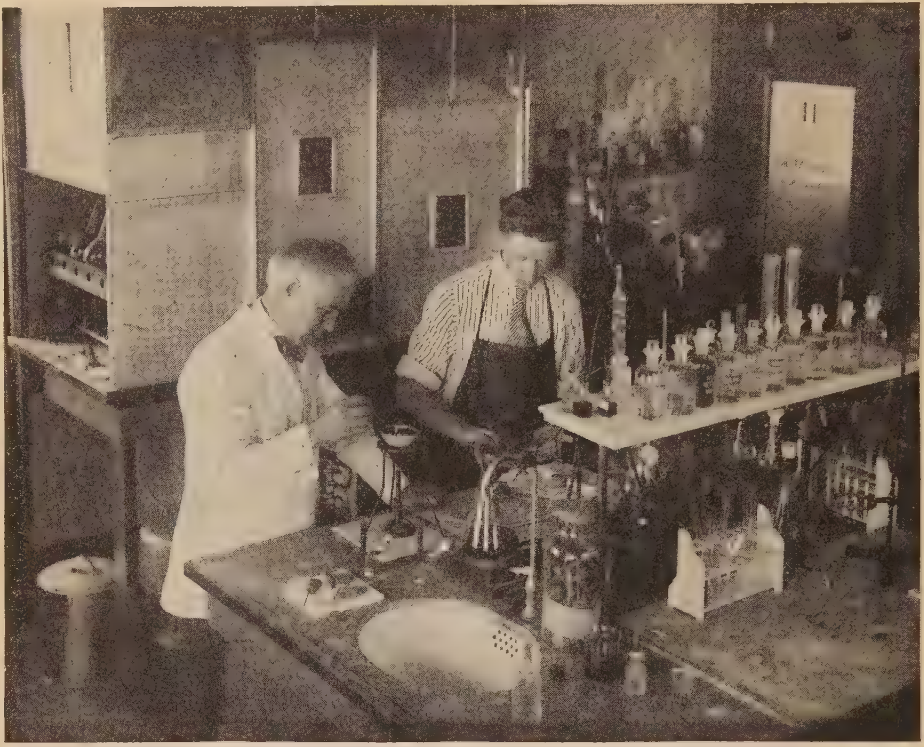


Because rats are carriers of disease germs which are collected in their fur, or because the rats are infested with disease-bearing fleas, the masters of vessels are required to attach disks like those shown in the picture, to the ropes with which their vessels are moored when they come into port. Mr. Rat can easily run along the rope but when he gets to this disk he can't get over. Farmers frequently carry out the same idea by putting tin hoods around the posts that hold up their corn cribs.

But while he is a very dangerous visitor when he comes from countries infested with plague, and native rats help spread contagious diseases, it must be entered to the credit of Mr. Rat that he also helps to prevent the spread of disease. How would you suppose? By eating waste food and decaying things which would otherwise pollute the air and help to cause fever. In the days before the disposal of waste and sewage had been reduced to the science it is today, the rat was of much importance in this respect.

Rats can and do make themselves at home everywhere. They never complain of the food or the poor quarters. They are found under the barn, under the house, in burrows under old walls, up in the attic, universal nuisances.

The Chemist and the "All-Day Suckers"



You know what an "all-day sucker" is don't you? It would be better for you if you didn't—that is to say, if you put them into your mouth. And I'll tell you why.

Prof. L. B. Allyn is here working with one of his pupils in chemistry in the High School laboratory in Westfield, Mass., and by the magic power of chemistry is making one of these "all-day suckers" tell what it is made of and he finds that it contains among other things, arsenic. At other times these candies and other cheap candies offered for sale are found to contain coal tar dye, to give them their attractive color. This dye may be attractive to look at but it is very bad for the stomach. Prof. Allyn became famous all over the country for the work he did in exposing the character of various foods and candies sold in stores, as represented by specimens brought by his pupils from the different stores in the town.

While we are here with him in his laboratory, the affair that looks something like a doll house with two windows just back of Prof. Allyn, is what is called a gas hood, because in it are put things from which poisonous gases would escape into the laboratory if the vessels containing them were not inclosed by this hood. The hood is connected with a ventilating shaft which carries the fumes away. Just inside the "front door" which is raised, are a row of flasks on a shelf which contain foods which are being examined to see how much nitrogen or protein they contain. Just beneath it, next to the can, you see the edge of an electrical whirling machine that separates things out of food. It works on the principle as the cream separator which separates the cream from the milk.

The painted glass in front of Prof. Allyn's assistant is an air extractor for taking fats and oils out of food products. Immediately below Prof. Allyn's right arm are three of those "all-day suckers" in the form of human hands, while in the jar just back of the wash basin is a jar of candy containing coal tar dyes. "If candy is properly made and properly used," says Prof. Allyn, "it is a valuable food product, but such candy as this is horrid and poisonous." Next to this jar is a cone-shaped flask which is warming on an electric stove.

To See if Bossy's Heart and Lungs Are All Right

Impure milk is one great cause of the spread of disease and many precautions must be taken by the health officers to protect the public against it. The milk may be impure because it has not been handled under cleanly conditions. Its impurity may also be due to some disease in the cow. The inspector here is listening to the lungs and heart of the cow, just as a physician listens to the workings of the human heart with a stethoscope. The sounds made by heart or lungs indicate certain diseases including consumption which affects cattle and some of the other lower animals just as it does human beings.

general welfare." This is, perhaps, the very largest power conferred by the Constitution. When you come to think of it, that power is limited only by the will of the people. Ideas change to suit the needs of new and changing times, and this is an age of progress when free people demand the highest social service from their governments.

A Modern City Market

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A section of the great Washington market in New York City, which covers an entire city block and is equipped with modern refrigeration. It is quite a contrast from the old-fashioned open market when the only protection against heat and flies was a piece of netting.

Meat and Dressed Poultry Under Glass

© *Pacific & Atlantic*

Another view of Washington market showing how fresh meats and poultry are kept in refrigerated show cases. One can buy all sorts of fruits and vegetables, dairy products, in fact everything for the table in this market.

"This Is the House That Eggs Built!"

Wide World Photo

This interesting house is made of lovely fresh eggs, and was shown at a recent poultry and egg exhibit. The snowy house is set in a tiny make-believe garden. The little golden haired maid is awfully proud of such a pretty house.

A Bombardment in the Battle of the Eggs

A number of years ago, when the Pure Food Laws were not respected as they are today, and merchants were not as careful about selling only selected and fresh eggs, it was not unusual to see a sight like the one pictured above.

The boxes of eggs were seized in the markets of Washington, and set on fire by this Deputy United States Marshal. If you had been within hearing distance, you might have thought that there was a battle going on. And indeed there was, a battle against bad eggs—over 89,000 of them. They all went off pretty close together like the crackers in a bunch in the time of the old fashioned Fourth of July.

Official Inspector Examining Barrels of Grapes

Here are a lot of barrels of grapes that have been shipped into a great city, and one of the food inspectors is emptying some of the barrels to see whether the grapes are in good condition.

What Is Done to the Bad Grapes

Out of all the barrels of grapes you saw in the previous picture, there were so many bad grapes in the barrels here shown that they have all been condemned, and the officer who showed you the bunch of decayed grapes is preparing to spray the barrels with crude petroleum, so that they cannot be offered for sale.

© *Pacific & Atlantic*

This is Balto, the leader of the string of "huskies" that sped over the snowy Alaskan plains with tubes of diphtheria antitoxin, which saved hundreds of lives in Nome, Alaska, during a serious epidemic. Balto is standing with his owner beside his own statue, which was erected in his honor in one of the New York parks.

© *Wide World*

Scientists have found that a certain amount of iodine will prevent and perhaps cure goiter. Encouraging progress has been made in determining whether milk with a sufficient iodine content may be used to combat this disease.

From the World Championship Hereford Herd

Herefords are beef animals as you will see by noticing their square, solid lines. The variety of grass crops which can be grown in winter as well as in summer in the South, thus greatly cutting down the cost of feeding them, makes the South an ideal locality for raising fine cattle The owner of the cattle in the picture built up his herd of Herefords in about five years. When he exhibited them at the International Stock Show in Chicago they won the first prize. These cattle are a living demonstration that tick eradication and leguminous crops pay the southern stock farmer big returns.

The Old South and the New

Southern Strawberries for Northern Markets

It is no uncommon thing nowadays to see delicious strawberries like these in northern grocery stores in March—three months before the home grown crop can be obtained. That is due to careful picking and improved methods of shipping, for some of the early berries in northern markets travel over a thousand miles—from Florida, Louisiana and California. These berries are as clean as they can be made without washing them, which would make them spoil, for dirty, wet berries decay more quickly than clean, dry ones. And see how carefully they are packed in the boxes, not jammed in just as they happen to fall, but laid in even rows. Whole districts in the South are devoted to the raising of strawberries for northern markets and it is the careful handling which makes our early spring supply possible. And the southern strawberry farmer can soon lay by a tidy sum; for it is the early strawberry that catches the best price.

AT the beginning of the Civil War thirty-four states had been admitted to the Union. The twenty-three fighting for the Union had a population of twenty-two million, out of a total of thirty-one million for the entire country. In the eleven states that seceded—Arkansas, Tennessee and the coast states from Virginia to Texas—there were only nine million people. Of these, three and a half million were Negro slaves, who were not used for soldiers. Thus the South was outnumbered nearly four to one. The only wonder is that it should have taken four years to conquer the Confederacy. To account for it we shall have to consider the advantages and disadvantages of both sides.

Difference Between the North and the South

In the North all the people were free, and fully ninety-five per cent of them were of the white

The Texas Steer

Stories of lawless cowboy days out West are full of accounts of the round-up, lassoing and branding cattle, and so forth. The Texas steer shown here is a sample of the breed that wandered over the western ranges fifty years ago and was rounded up, counted and branded only twice a year. As the density of population increases in the western and southern states, fewer and better cattle are kept, but they are fed regularly or kept in fenced pastures and are bred up to a certain standard for their meat or milk-giving qualities. Like the razorback hog, the Texas steer is small, swift, and bony. His horns are formidable weapons of defense, as you see. With the introduction of the dipping vat for eliminating cattle ticks, the South is forbidding the keeping of cattle on open range, and the picturesque Texas steer will soon be extinct for he is a nondescript and cannot hold his own in competition with the purebred Holstein or Hereford. He is profitable only when his food costs nothing at all, not even the labor of giving it to him. This one is kept in the Wichita National Forest, Oklahoma.

Great Advantages of the North

race, of every energetic and industrious nationality of northern Europe. Here, where every man took pride in working with his hands and brain, were the manufacturing cities, the successful business men, the skilled mechanics and inventors, the most varied farm products, the iron and coal mines, the shipyards and hardy seamen, and the highly developed systems of transportation. As Napoleon said, an army "travels on its stomach." Soldiers must be well fed, well cared for in camp and hospital, and liberally supplied with munitions of war, if they are to do their work. These conditions of success attended the Union armies. Behind them crops were grown and harvested throughout the war, without interruption. Flour, cotton, woolen and steel mills, packing houses, clothing factories, machine shops, chemical, munition and gun works, coal mines, blast furnaces, railroads and shipyards were in constant operation. No property was destroyed, nor the lives of civilians in danger, for only one great battle—Gettysburg—was fought on northern soil, above Maryland, Kentucky and Missouri.

The North was more than self-sustaining. It had a large surplus of wheat and other products to sell abroad. The seaports were open to trade, commerce was only spasmodically interrupted by Confederate raiders, and the credit of the national government was maintained in every foreign capital. Although conscription was resorted to, less than half the men of military age and fitness were drafted into the army. Plenty were left at home to conduct the greatly increased business of the nation, and also to work on the Union Pacific and other new railroads. The chief disadvantages of the federal government, in the early years of the war, was that it was unprepared, and the people were divided. There were men of every shade of opinion, from Abolitionists to those who openly sympathized with the South. There were farmer boys in the army, but a large percentage of the soldiers were city clerks and mechanics. These were untrained, unused to out-of-door life and to the handling of horses and firearms.

Conditions in the South

Now let us consider conditions in the South. The region was purely agricultural, but limited to a few large crops that were grown for exportation. The southern states had enormous wealth in their cotton, rice, sugar and tobacco, and in the naval stores yielded by the pine forests. They produced one-fourth of the corn crop of the country, but this, with the other grains and forage, was consumed at home, by the slaves, the necessary farm animals, and by the many riding and driving horses that were kept for pleasure.

Not a Manufacturing Section

The South grew only a part of its food, and imported all the clothing for its population. Many planters found it more profitable to put all their land in cotton, the big money crop, and to buy the pork, meal and molasses, as well as the coarse cotton cloth, that was needed to feed and clothe their negro field hands. Clothing, furniture and books, building materials, carriages and wagons, locomotives, rails and cars, telegraph wire, steamboats and machinery, farm and building tools, saddles and harness, even horseshoes, nails and salt, were purchased in northern markets or abroad.

This made the South dependent on the outside world for almost every necessity. In the entire region there were no coal or iron mines in operation, no blast furnaces, and only 20,000 miles of railroads. There were neither manufacturing cities nor the small factory towns that were so numerous in the North, and consequently, few skilled mechanics. There were cotton gins at the shipping points, and small saw and gristmills, to supply local needs; but the necessary blacksmithing, carpenter work, brick laying and shoe and harness mending was done by negroes in plantation or village craft shops. The most serious defect of slavery was to make white men look down upon manual labor. Very few had great wealth or desired it. The independence and agreeable leisure secured by land and unpaid labor made men despise trade. Life was little changed from the time of Washington. Planters lived like the country gentry of England, managing their great estates and cultivating their minds and the social graces. Younger sons studied for the professions or the army, or went into politics.

The South's Military Advantages

Thus industrially and economically the South was hopelessly handicapped in the great war. Trade with the northern states was stopped at once, and immediate steps were taken to blockade the southern coast and capture the ports, in order to cut off trade with foreign countries. But in a military way the Confederate States were much better equipped than was the Union, in the first two years of the war. For one thing, they were "solid." The white people were all of old colonial stock, united in political opinions, feelings and interests. Then, all southern men lived in the open. They spent their lives in walking, riding and hunting, and were skilled in the use of firearms. Besides, they were in their own country—knew every wood and stream and wild path in it. And they fought on the defensive. Nothing can equal the courage, determination, endurance and resource of men who fight to defend their families and homes against the invader. For three years Lee held the army of the Potomac in Maryland and northern Virginia; and for more than two years the forces in the West were kept as far north as Tennessee.

In the beginning the South was much better prepared for the war than the North. As fast as the states seceded they seized the government arsenals and the forts within their borders, and the state legislatures made large appropriations for the purchase of guns and munitions abroad. Although Virginia did not secede until after President Lincoln issued the call for volunteers, it secured more than $10,000,000 worth of powder, balls, cannon and ships from the arsenal at Harper's Ferry and the Norfolk Navy Yard. When these supplies were exhausted, however, the South could get only what the blockade runners could manage to smuggle in.

Then Came the Time of Suffering

The people suffered immediate distress in every comfort of living. The crops could not be sold, and money gradually disappeared. There was merchandise in the stores for only one season. The clothing of women, children and negroes could be made to last a long time, but the soldiers, in their rough campaigning, soon wore out their uniforms and were reduced to makeshifts.

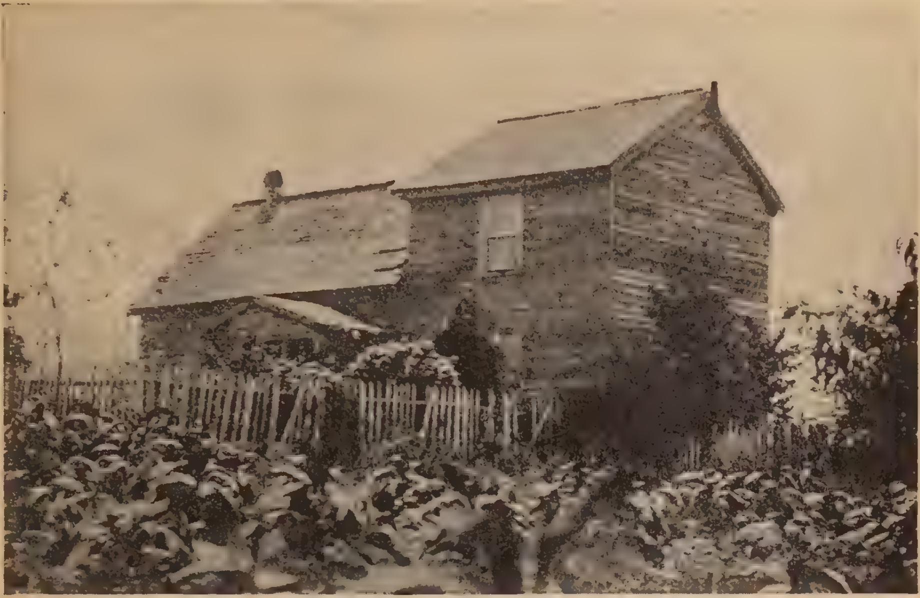
Back to Pioneer Conditions

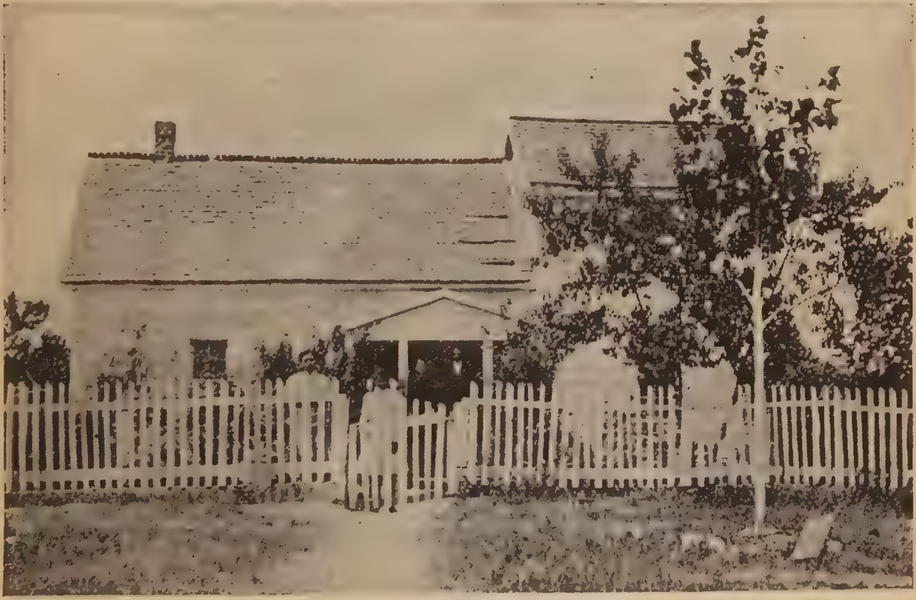
Then women, unused to toil, had to begin home manufacturing with the crudest materials and tools. They learned to spin and weave on old colonial wheels and looms, brought down from garrets. They dyed their cloth with walnut hulls, indigo and swamp-maple bark. They roasted rye and wheat for coffee. And the men had to learn to mend the old muskets, rifles and shotguns that were pressed into use. Iron and steel of every description was gathered up, even fire pokers and hoes, and beaten into horseshoes and bayonets. Boxes and barrels, used in packing meat and fish, were soaked in water for the salt. With baled cotton rotting on decaying docks, curtains and bedding were made up into dresses for women and shirts for soldiers.

While the Union used only half its military strength, nine-tenths of all the white men between sixteen and sixty in the South were drafted into the Confederate army. And so that every soldier should count as a fighting unit, the camp cooking, team-driving, trench-digging, and the work on fortifications, was done by Negroes drawn from the fields. Only women, children and old men, black and white, were left at home, and the horses and cattle were taken for the army. The fields grew up to weeds. Fences fell, buildings decayed from neglect, business stopped and railroads were ruined for lack of repairs and coal. In the last year of the war the weight of twenty-three states fell on seven.

The work of ruin was completed when Union armies rolled across Georgia and Virginia, and emancipated slaves deserted the last camps and fields. Property of every

"Before and After" the Demonstrator Came





Since such a large part of southern agricultural land is cultivated by Negro farmers, it is very important that the Negroes learn how to farm efficiently. The pictures show the effect of a few lessons from the government demonstrator on a Negro's home and dooryard. Many of the demonstrators are themselves Negroes working under white supervision. In one Alabama community the Negroes have formed a club, which requires every member to have an enclosed garden in which something is growing the year around; to keep one hog for each member of his family, not less than thirty hens, and one or more cows; to preserve or can fruits enough to last over the winter; to plant shrubs, whitewash the house and take an agricultural paper. Such movements among the Negroes themselves will do away with the time-honored charge of shiftlessness laid at the Negro's door.

description was destroyed wherever retreating or invading armies passed. Hundreds of miles of railroad were torn up and the bridges and ties burned. Of the South's million soldiers, three hundred thousand were dead or disabled. Those who survived returned to reduced families, in homes of desolation, to face starvation. The farm lands were laid waste, and there was no machinery to cultivate them, no seed for planting. Live stock had disappeared.

In the Desolated Land

The Period of Reconstruction

Your history tells you of the "Reconstruction" period. This refers to the work of restoring the civil government, the readmission of the seceded states to the Union, and the securing to the freedmen of their new rights of citizenship. The work was not completed for ten years, and it was not done in the wisest, kindest ways. Never was Lincoln, "with malice toward none and charity for all," so much needed at the helm of state as in the years which followed the close of the war. Officials of the federal government, sent from the northern states, were long in control in the South—a political army of occupation in a conquered and devastated land. Then was an era of "carpet-bag" and Negro domination, of oppression and robbery; then another of revolt and terrorism on the part of the organized white population. Socially, industrially and politically the South was demoralized for a decade. Southerners speak of this period today as the "Era of Destruction."

For quite ten years the South steadily lost ground. Its property value of twelve billion in 1860, dropped to three billion by 1870. The Negroes, very little exposed to the perils of war, had increased to four million, which was then more than half the total population. Uneducated and unused to responsibility, many of them became idle and shiftless, or so helpless without direction, that they were as dependent as in the days of slavery.

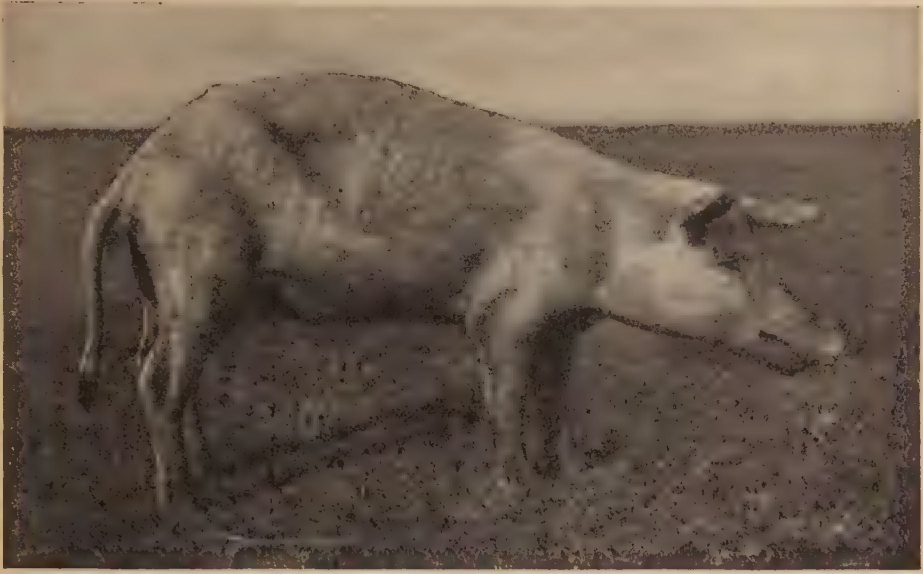
Upon the white owners of ruined properties was laid the burden of restoring the neglected soil, rebuilding what had been destroyed, paying the excessive taxes of corrupt government, adjusting their agricultural industries to new conditions of paid but undisciplined labor, and supporting the dependents of both races. So great was the poverty and wretchedness of the land that two and a half million people were forced to emigrate to northern or western states. Those who left were mostly the strong and ambitious young people, white and black. By 1875 the population had declined to seven million, and the property value to one-fourth of what it had been fifteen years before, while the northern states were increasing in wealth and numbers at an incredible rate.

Under a Fearful Burden

In the School of Misfortune

Many people predicted that the South could never rise again. But one of the most inspiring things in history is to discover how the greatest of all countries have been built by people who have struggled up against overwhelming odds. Such people as the people of the South are not crushed, but strengthened, by misfortunes and hardships. The city of Venice, "Queen of the Adriatic," and ruler of a mighty republic of the Middle Ages, was built by a

The Razorback and the Thoroughbred



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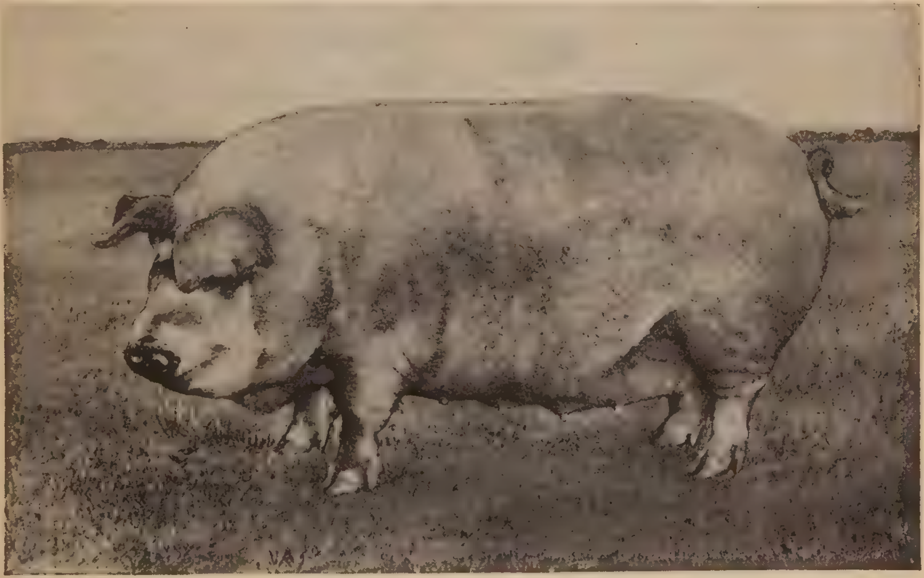
These two pictures of the "razorback" and the thoroughbred hog may well typify the difference between the farming methods of the Old South and the New.

The razorback or "piney woods" pig is the native semi-wild hog of the South. Allowed the run of the woods and fields, and seldom fed at the home barnyard, these animals have developed long, burrowing snouts and rangy legs which are capable of out-distancing the average dog. The razorback is usually left to forage for a living, so he hasn't acquired the fat-producing power of the more thoroughly domesticated hog and has remained muscular and bony like a wild boar, the ancestor of the swine family. Contrast the relative size of bone and amount of fat in the two animals shown here. The larger animal is a Chesterwhite, one of the best-known lard types of hogs.



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Where Your Rice Pudding Starts

Louisiana has many acres of ideal rice land—low, moist, and rich—and it produces more rice than any other state. It now has almost 350,000 acres of rice. The picture shows you how it is cultivated—in high, ridged rows. Notice the reed-like character of the leaves, which is typical of plants that grow in very wet soil.

band of wretched fugitives on a cluster of marshy islands. And the Dutch spread their fields of bloom on barren sand dunes, which they walled from the sea. So the people of the southern states, through disaster, found in themselves powers which they had never used nor dreamed that they possessed.

The Great Lesson of Labor

The first and most important result of the disappearance of slavery was the breaking down of the prejudice against manual work in the white people. "Gentlemen," obliged to care for their families, put their skilful hands and trained minds to the hardest tasks, and slowly repaired their broken fortunes. With no money or credit to operate large plantations, many of the big estates were cut up into small farms. These were sold to poor whites, who had never been able to own anything before; or rented to former slaves, who paid crop rent and worked their little holdings under the supervision of the owners. And, as every family was obliged to supply its own necessities as largely as possible, land was used to its full advantage. Crops became more diversified. Every negro cabin had its garden, its working mule, its cow, pigs and chickens. Waste lands were cleared and drained. Educated men very quickly became good carpenters, coopers, brickmakers, stock breeders, engineers and machinists. Saw and grist-mills multiplied, rice and sugar culture was extended, and modern farm and mill machinery and improved methods were introduced.

At the End of Twenty Years

By 1880, the South, while buying much less than in the old, lavish, wasteful days, was living in comfort and growing as much cotton and other export crops as in 1860. The

The Hidden Treasure in the Peanut Field

Southern farmers who have grown the same crop on the same land, year after year, are learning that changing the crops from year to year makes the land yield more and better crops. The picture shows a thriving field of peanuts in Oklahoma. Peanuts, like clover and cow peas, form little "nitrogen factories" in their roots and hence add fertility to the soil.

cities, docks and railroads had been rebuilt, emigration had stopped, and the white population was growing. As soon as a little spare capital was accumulated a few small cotton-mills were built at waterfalls, to supply the home market with the coarse cloth needed by field laborers.

This was, indeed, the only way in which the larger industrial development of the South could have been begun. The bitter animosities engendered by the war were long in dying out, and it was useless to try to borrow capital in rich northern cities, where sympathy was still all for the freedman.

Education of the Negro

But this feeling had become helpful in solving the labor problems of the South, to which skilled white workingmen refused to emigrate. The South was obliged to educate its mechanics. Benevolent organizations of the North had, at first, been emotional and harmful to the black race. Negroes had been educated for the professions in which the openings for them were few. Now, education was aimed toward fitting the Negro into the great world of industry. Hampton Institute was established in Virginia, and its colored graduates went out as teachers among their own people. The most famous of these was Booker T. Washington, who, born in slavery, built up, almost unaided, the great Tuskegee Institute in Alabama. There, today, negro men and women are taught farming, housekeeping and the skilled trades. Its graduates are doing an important part in uplifting their race, and in building up the New South. One of the most interesting and inspiring autobiographies ever written is Washington's "Up From Slavery."

Aside from the unfriendly feeling caused by the war, northern

"New South" Farmer Girl in the Tomato Patch

Tomatoes are one of the chief crops of the truck farmers of the South. The girls' canning clubs which have been organized along the lines of the boys' corn clubs, teach the farmer's daughter to grow and can tomatoes for the market. This picture shows an energetic girl of the South at work in one of the southern fields after a bumper tomato crop.

manufacturers had, since the earliest colonial times, looked upon the agricultural South as their market; and they honestly doubted if southern men had the energy and ability to build and manage factories and to sell their product. History, you see, is an endless and complicated story of causes and their logical effects on every human activity. The South had to overcome, not only hostility, but its own reputation for lack of enterprise and practical capacity.

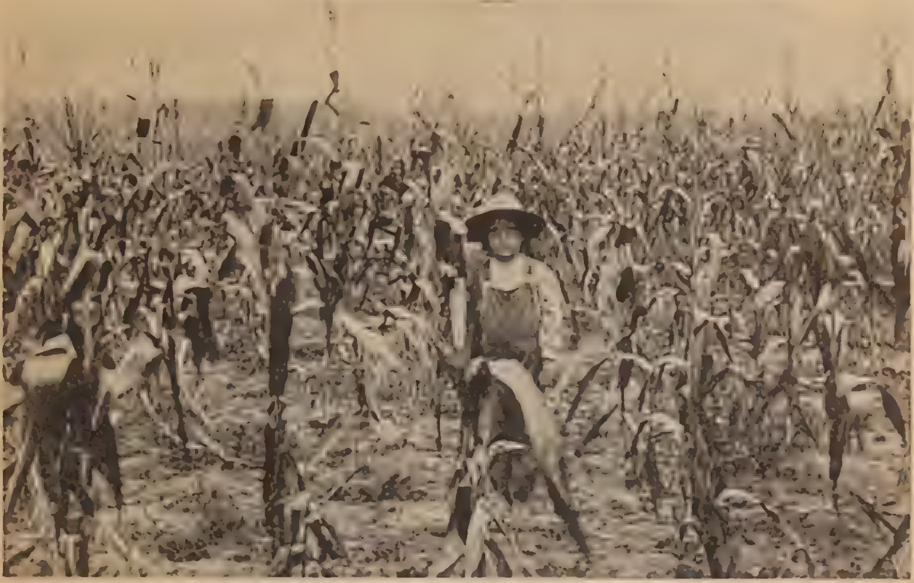
There was, however, by this time, not a little generous recognition of the heroic labors of southern men, who, with no outside help, were building a new and better prosperity on the ruins of the old. And a few men of clear vision, in both sections, realized that the development of varied industries in the South would not only enrich the whole nation, but that it was necessary for the rebirth of that spirit of national patriotism and indissoluble union, for which the war had been fought.

Then the Situation Changed

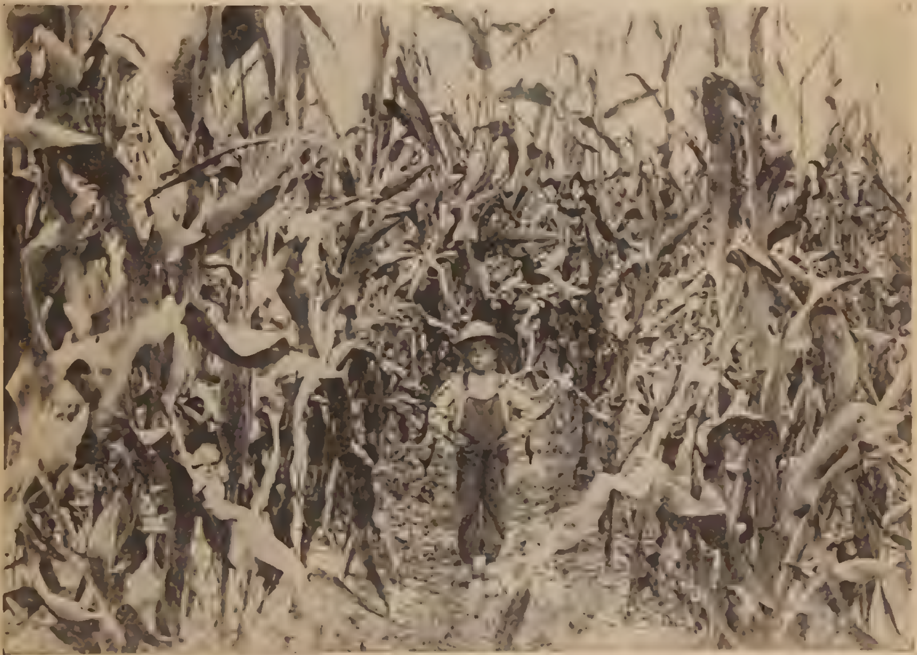
Northern Capital Comes in

Then, suddenly, the whole situation was changed. About 1885 the northern and western states began to fill up so rapidly that it was plain that the powers of all the people, and the resources of all sections, must soon be taxed to supply the needs of the population and to keep pace with foreign markets. A new generation having grown up, with no memories of the war, northern men began to seek opportunities for profitable investment in the South. Gradually the vast, unsuspected natural resources of the states that had formed

What This Little Boy Taught His Father



The boys' corn club movement has taught backward, uninformed farmers that the government methods achieve results; it has driven home the lesson to the farmers in the most effective way—that of being beaten at their own game by their children. Under the direction of the government demonstrator, many boys have produced crops several times bigger and better in quality than those raised by their fathers on adjoining acres of the same farm. One of these pictures shows a boy standing between the rows of his demonstration corn crop and the other shows him in a field of corn raised the same year on the same farm by a tenant farmer.



Putting the Early Vegetables to Bed

Truck gardening is intensive farming. No steam tractor plows and gasoline seed distributors can be used here, for the acreage is small and each plant has to be put through many careful operations to gain the best results. After the seeds for most truck garden vegetables are in the ground the soil is worked over by hand, as you see the two men doing here. Because truck farming is usually done on a small scale the greatest pains must be taken to get the most money possible out of the space available. That is why the farmers bend every effort toward making their vegetables mature early, before the market is oversupplied.

the Confederacy, or lain on its borders, were uncovered.

What was it that men looked for? What is it that makes countries rich and populous? Just a few fundamental things alone or in different combinations— iron and other useful minerals, oil and coal and a fertile soil, water-power and a good location—on the great highways of trade, a favorable climate, which affects the energy of people

Foundations of Natural Wealth

The wealth and power of England are due to her coal and iron mines, and to the cotton and other raw materials which her merchant fleets bring to her mills from every part of the world. New England, with nothing but a favorable location, timber for shipbuilding, and abundant water-power, was built up on the ease with which cotton, wool, leather, pig iron and coal could be brought to her factory doors and railroads, and finished products distributed to the markets of the world. Pennsylvania found riches in its extensive coal fields, and in the cheap water transportation for the iron ore of the Lake Superior region, to keep its blast furnaces going. The wealth of some of our states rests on the products of the soil—wheat, cattle or cotton.

After the invention of the cotton gin, the southern states produced a large percentage of all the raw cotton in the markets of Europe and America. Their crops were so valuable that every other source of wealth was neglected, and they suffered from other disadvantages. An enervating climate and slave labor made the best part of the population indolent. But after the war white men of education and property were obliged to go to work, and their am-

Where the Cane Juice Is Turned to Sugar

This is a picture of a sugar mill in the South, surrounded by fields of sugar cane. You see the cane has been cut and the men are stacking it up, but because the cane is so coarse and not easily stacked like wheat, stakes driven into the ground form an inclosure for it. The cane is growing in rich swamp land which has been drained. Notice how level the ground is.

bition was aroused; they began to consider in what other profitable ways, besides farming, they could use their energies and the little spare capital that they began to accumulate. The most obvious thing to do was to work up some of their raw cotton at home.

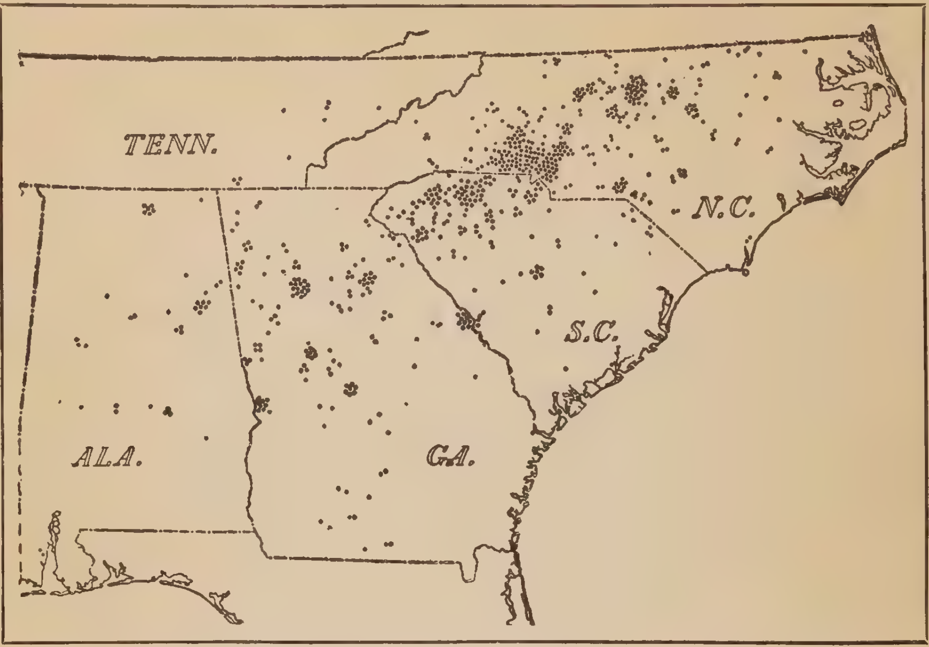
Beginning of the New South

The Fall Line and the Cotton Mills

As an experiment a few cotton mills were built at the waterfalls that, just as in the middle states, were formed in every stream where it dropped from the piedmont belt to the coastal plain. This is the famous "Fall Line," which runs midway between the mountains and the sea, from New Jersey to Alabama, and around the southern end of the Alleghenies. You can trace it on your map through Roanoke, Raleigh, Columbia, Macon and Montgomery. Descending from a region of rough foothills, that had never been cleared of their heavy growth of pine and hardwood forests, these falls had never turned any wheels. There was a second line below these, too, for the piedmont belt, with the coastal plain, widens toward the South, and the land drops again when you find Spartansburg, Charlotte, Atlanta and Birmingham.

All of these places are, today, factory cities, as busy and noisy as the mill towns of New England. Lumber-mills were built also, to work up the timber. Then followed furniture and tobacco factories, and the cut over lands of the richest virgin soil were soon cleared for market garden and fruit farms, to supply nearby towns and the markets of northern cities. Then, to the amaze-

Each Dot Stands for a Cotton Mill



This map shows you how thickly the cotton mills have sprung up all over the South. By comparing it with the map showing the cotton regions in the article on the Southern States, you will see that most of these mills are located on the edge of the regions in which most cotton is grown, with the exception of the cotton regions in Texas. Then, if you will remember the location of the Fall Line, you will understand why Texas is not shown on this map.

ment and delight of the South, the whole western slope of the mountains, was discovered to be underlaid with coal. In West Virginia, eastern Kentucky and Tennessee and northern Alabama, sixty thousand square miles of coal lands were surveyed—five times the total area of England and Germany, and the coal lay in so many deep and continuous veins that it is estimated to contain 5,000 tons of fuel to the surface acre.

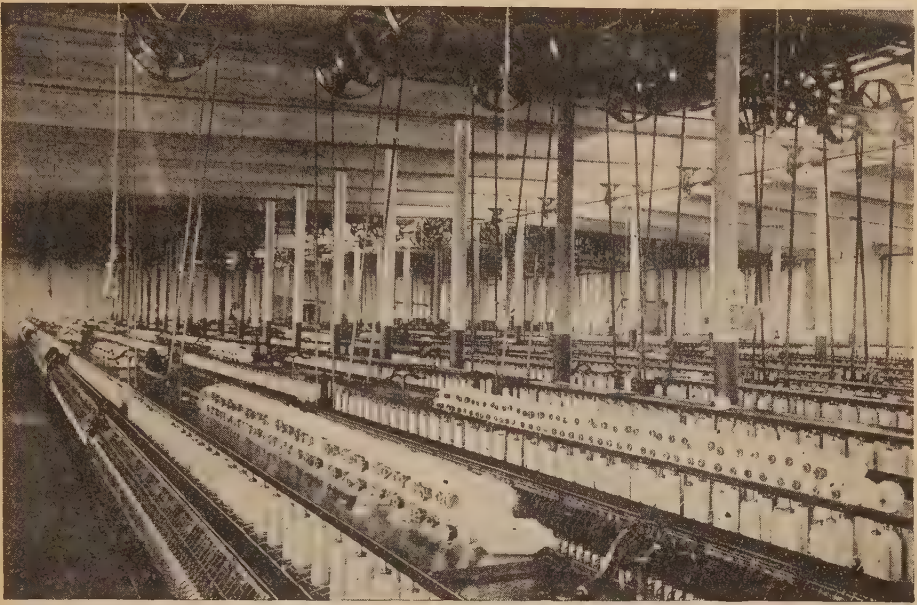
And Such Beds of Coal and Iron!

This was discovered just as some other great coal fields of the world were beginning to decline in their output; and enormous deposits of iron ore were found in Tennessee and Alabama, about the time it began to appear that the iron mines of the Lake Superior region were not inexhaustible. So, there, at the southern end of the long Appalachian Highlands, where coal, iron and the limestone for purifying the ore in blast furnaces, occurred in vast quantities and in close proximity, stands Birmingham, the Pittsburgh of the New South, destined to be one of the greatest steel centers in the world.

The People of the Mountains

High up on both slopes was found still another source of wealth—the forgotten people of the mountain farms. Too poor to own lands or slaves in the tidewater region, in early days, they had gone to these wild uplands, and cleared and tilled their own rough acres. Many of the dauntless breed of Daniel Boone had started for the valleys of Kentucky or Tennessee, but had been stranded

Inside One of the Big Cotton Mills



Here we are inside one of the big cotton mills of the South. We see thousands of bobbins wound with the cotton threads that are afterwards to be woven into cloth. These bobbins are placed on machines called speeders which twist the fibers into yarn. There are two kinds of spinning machines: one is called the "ring spinner," the other "the mule." (Who would think of finding a mule in a cotton mill!) The mule winds the thread onto spools called cops, from which it is rewound on bobbins, long rows of which we see before us here. The bobbins are afterward arranged on frames from which the threads are passed into the warping machine which forms the "warp" across which the "weft" or cross threads are woven later, so making the cloth.

by accidents in the mountains. There they had lived like the earliest pioneers for quite a hundred years, and grown strong and hardy on toil, simple living and the pure, bracing air.

Some one has called these people our "contemporary ancestors." Certainly there is in them the best blood and highest courage of the seaboard colonies, and they have lost nothing in mental vigor by standing still for a century. Grasping the first opportunity to escape from their long exile from civilized communities, they eagerly flocked down into the foothills to work in the new lumber camps, mills and mines. It would be difficult to overestimate their value. Without this new source of superior labor, the South could never have been developed so rapidly. White emigrants have never been attracted to this section; and the negroes of the warm, moist coast do not thrive in the cool, dry mountains; and they are, besides, needed in the spreading fields of cotton, sugar and rice, and in the skilled trades in growing cities and towns.

New Source of Brains and Vigor

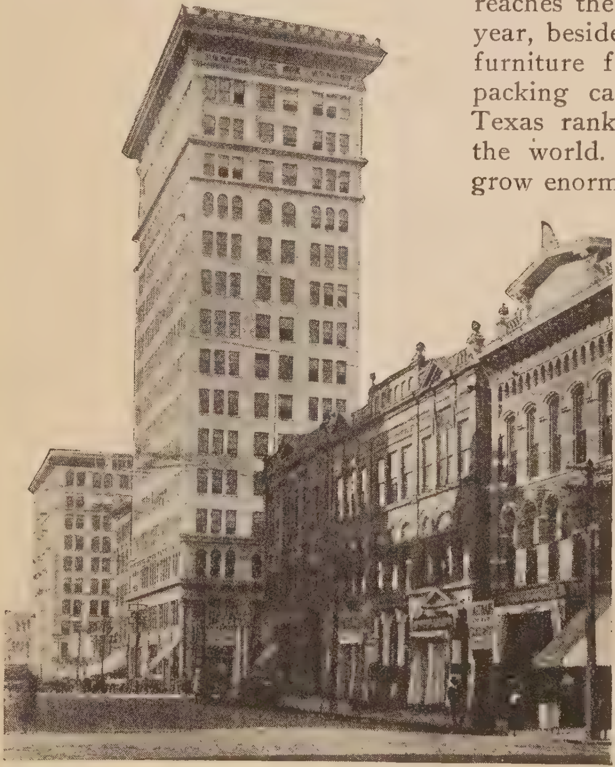
Many of these mountain men, too, while rude and unlettered, had a quick grasp and native shrewdness. Refusing to sell their valuable timber and mineral lands, they permitted them to be worked under leases on a royalty basis. They used their big incomes to educate their children; and the second generation returned to manage their own mines and mills, and to enrich the South by making use of their native ability, energy and capital.

In broad diversification of manufacturing, and in making the finer finished goods, the South is still, of course, far behind the northern states and western Europe. But it has unlimited quantities of the most essential raw materials—coal, water-power, oil, iron, timber and cotton. And it has made long strides in the production of coal, coke, pig iron, bar steel, crude petroleum, lumber, and the coarser grades of cotton cloth; in opening its fine quarries of building stone, granite and marble, and in developing its beds of phosphate. Side by side with this has gone the extension of the acreage and improvement of methods in cultivating the big export crops, and in truck gardening and fruit growing. Population and construction work have kept pace with the growing industries.

Some Striking Figures

In 1875 the South had only seven million people, while the Japanese Empire, which is smaller than Texas alone, supports fifty million. Within forty years the population of the South has increased to nearly thirty million. Its wealth of three billion has been swelled to over thirty-seven billion. The capital invested in cotton mills in thirty years has multiplied tenfold, and so has the production of iron. The railroads have been rebuilt and re-equipped, and have trebled in mileage. The big export crops have jumped from a value of $650,000,000 to nearly $2,000,000,000, of which one-third is for cotton. The lumber trade reaches the total of $250,000,000 a year, besides what is used in home furniture factories and in making packing cases. The oil fields of Texas rank among the greatest in the world. Texas and Oklahoma grow enormous crops of wheat; and as the western ranges disappear, it is to their ranches, and to the rough pasture lands of the southern states that we are beginning to look for future supplies of beef cattle.

This rapid, many-sided development has made the most extraordinary changes



A Business Street in Birmingham

This scene on a business street of the great and prosperous city of Birmingham. Ala., will give you an idea of the growth of the cities of the New South since their rich natural resources began to be developed.

Freight Yards at Nashville

This picture of railroad yards in Nashville illustrates how the growth of industry and the development of railroads in the South have gone hand in hand. Nashville, as you know, is built on hills and bluffs overlooking the Cumberland. The railroads follow the low river banks.

in the appearance of the whole country. Before the war the population was thin and scattered, and agriculture was the only industry. The coast lands and rich river bottoms alone were thickly settled and highly cultivated. Certain favored districts were taken up with big plantations, each with its fine old colonial mansion, its own wharf, negro quarters and craft shops. Poor whites, who owned few or no slaves, occupied the less desirable lands, and never prospered. The only towns were stagnant villages, the county-seats or "Courthouses," and the state capitals and seaports, that were social and political centers. These were reached by leisurely steamboats, or by slow trains, that rumbled over rusty, narrow-gauge railroads. The local travel of the wealthy was done in elegant carriages or on horseback; and carts, drawn by mules, were the means of locomotion and trade used by poor whites and Negroes. By far the larger part of the country was in pine forests, cypress swamps, canebrakes and sand barrens, and in unexplored, wooded mountains, whose wealth in timber, water-power, minerals and vigorous people was unsuspected.

The South as It Was

Now the coast is a country of gardens and orchards, cotton, rice and sugar fields, and of winter resorts which vie with those of southern California in beauty and luxury. The piedmont belt is another region where a ribbon of truck and fruit farms lies between the hardwood forests of the higher slopes, and the factory cities of the Fall Line. Modern railroads skirt the coast, run along the foothills, come down the

The South as It Is Today

Louisiana's "Little Italy"

INDEPENDENCE

In the strawberry raising and truck-farming section of Louisiana, near Independence, large colonies of Italian immigrants have settled. They are thriftier than colored people and soon have all their land under cultivation and their little farms paid for. The Illinois Central, which runs through Independence, has built this fine depot to keep pace with the prosperity of the inhabitants.

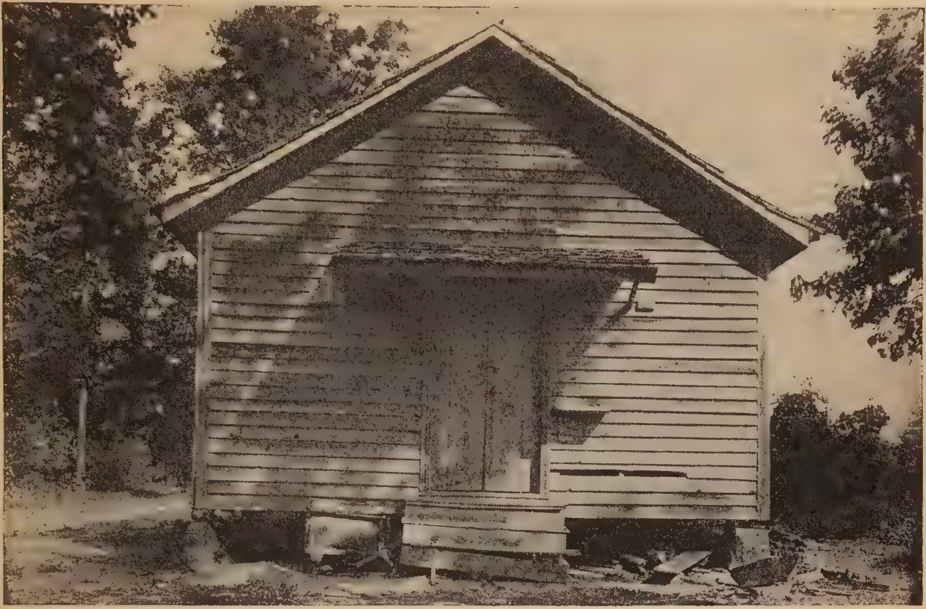
old Shenandoah Valley, which Lee's armies used for a wild highway, and connect the Ohio River and Great Lakes with the Gulf. Steamboats ply on the tidewater rivers, and coastwise trading vessels touch at countless little harbors all the way from Baltimore to Galveston. From the seaport cities one can go in the finest ocean steamers to Panama, the West Indies, Europe and South America.

To most people it is surprising to hear that New Orleans ranks second among the seaports of the United States in the bulk and value of its export trade, although five other ports exceed it in population. And Galveston, Texas, ranks third, with its enormous exports of cotton, wheat, rice, lumber, oil and the cattle of the Southwest. For hundreds of miles along that coast there is no other harbor. It is the converging point for nine railroads and fifty-three lines of ocean steamers. That is why it had to be rebuilt and protected by seventeen miles of concrete sea wall, after it was destroyed by a tidal wave and hurricane in 1900.

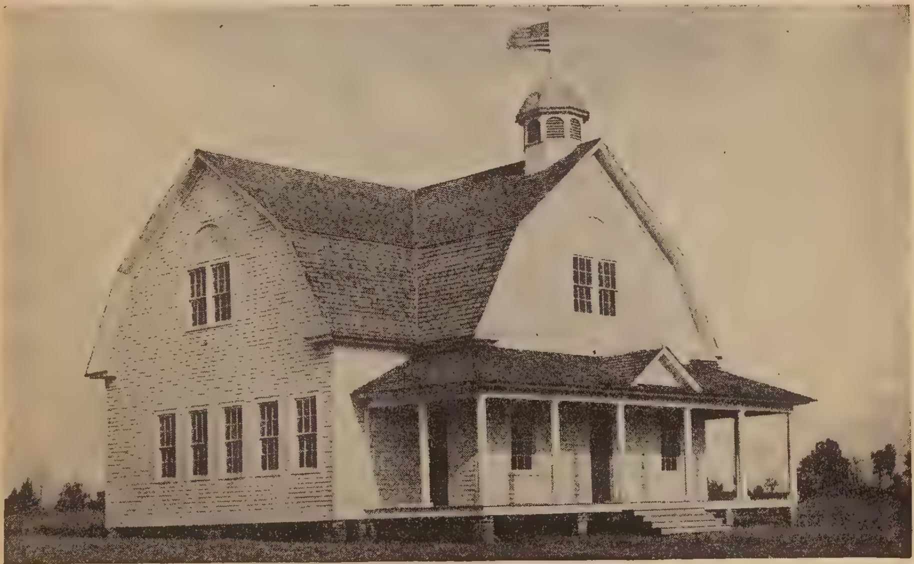
Great Business of the Ports

Probably no other city of equal size in the United States is so interesting from the standpoint of civic life as Galveston. Not only did it set an example to all cities in the astonishing rapidity with which it rose in new material strength from its great disaster, but in moral strength and efficiency in inaugurating a new era in the life of cities. It established what is widely known

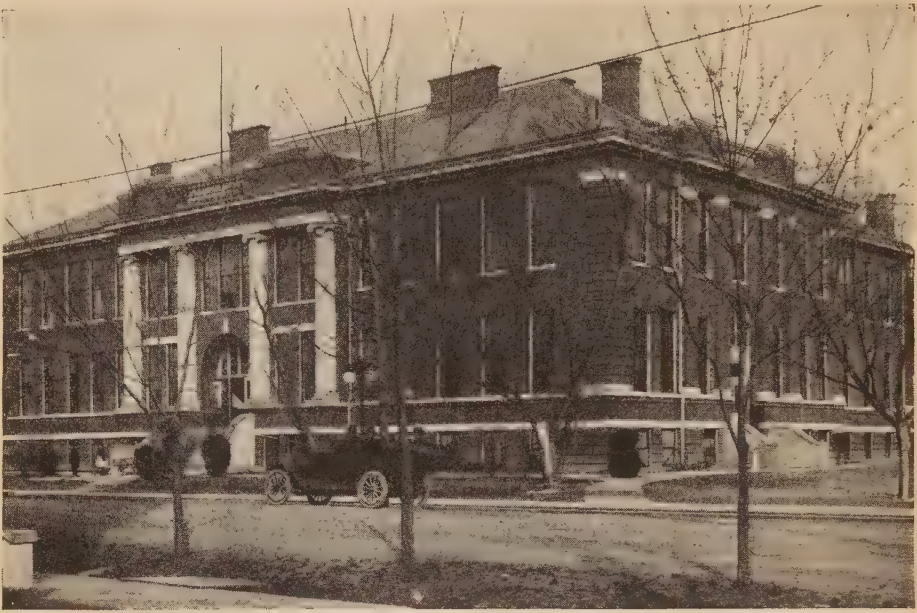
The Old and the New in Southern Schools



The improvement in school conditions in the South and the great need for improvement is well illustrated in this and the following picture. Many southern children still get their education in a one-room country school of the type of the "Old Unity School." Untidiness, disorder, and dilapidation are to be found at the school, as well as in the homes of the poorer class of rural southern children. Add to these conditions the fact that in many of the rural schools the session lasts for only five months or less, instead of nine as it does in the North, and that the teachers are too overworked and inexperienced to cope with their manifold difficulties, and you will understand something of the South's educational problem. The public school systems of the southern states are not thoroughly organized and are corrupted by politics. Money for the improvement of schools and the payment of a sufficient number of trained teachers is often lacking, so that whatever improvements are made must come from the localities themselves.



A School House of the New South



Yazoo City, Mississippi, is typical of the new spirit which animates the South. Mississippi used to be known as one of the most backward of southern states, with her large proportion of illiterate Negroes, sparse population and large areas of undeveloped land. But these conditions are changing, and Yazoo City is only one of the Mississippi towns that is waking up to a realization of the vast wealth they possess in their rich, black soil and long growing season. Yazoo City is a wide-awake, enterprising community as this fine schoolhouse shows. Notice the "dental work" that has been done on the trees near the school building. If you do not know how and why trees are treated in this way, read about it in the article on Forestry.

and practiced as the "commission" form of government or the "Galveston plan." By legislative act the ordinary method of government by mayor and council was abolished and instead there was created a board of commissioners, one member of which is president and all are elected by popular vote. One commissioner, a banker, with an expert accountant as city auditor under him, looks after the city's finances and in a similar way each department of the city's business is attended to by clean, able business men and experts. You see in this way the business of running a city is looked after just as any other business enterprise would be, instead of being regarded as one of the perquisites of party victory and given to men for their service to the party rather than their ability and desire to serve the public. Galveston exports one-third of all the American wheat that is shipped abroad; Gulfport, Mississippi, leads in lumber shipments, and Mobile in bridge timbers and railroad ties.

Like a Work of Magic

It is a New South, in truth—sprung up like magic, in the course of one generation. The bitter memories of the war are dying out. As we have seen, North and South joined in celebrating the centenary of the birth of General Lee. Old soldiers in blue and gray, clasp hands on the battlefields of a half century ago; decorate the graves of each other's dead, and exchange captured flags and cannon. Thousands of southerners, white and black, are now living happily in the North, and northern people are finding new homes and opportunities in Dixie.

The old South is gone, and no one would have it back again. But its gracious memory is cherished in song and story; and the best of it survives in the gentle manners, and in the leisure for culture and hospitality in old southern families.

A Southern Hostess and Her Dinner Guests

Things "come easy" in the South, and that is probably one reason why this part of our country is only now beginning to realize its possibilities. The northern farmer has been developing prize milk and beef cattle by feeding them in the barn seven months in the year, while in the South they can be kept out of doors on green, instead of dry, food the year around. The result is that better calves can be raised in the South for about half what it costs to raise them in the North, and here is one of the farms on which they are doing it. The little girl in the picture is presiding over the dinner table of a small herd of young Louisiana Jerseys which are all her own.

To a Waterfowl

Whither, midst falling dew,
While glow the heavens with the last steps of day,
Far, through their rosy depths, dost thou pursue
Thy solitary way?

Vainly the fowler's eye
Might mark thy distant flight to do thee wrong,
As, darkly painted on the crimson sky,
Thy figure floats along.

Seek'st thou the splashy brink
Of weedy lake, or marge of river wide,
Or where the rocking billows rise and sink
On the chafed ocean-side?

There is a Power whose care
Teaches thy way along that pathless coast—
The desert and illimitable air—
Lone wandering, but not lost.

All day thy wings have fanned,
At that far height, the cold, thin atmosphere,
Yet stoop not, weary, to the welcome land,
Though the dark night is near.

And soon that toil shall end;
Soon shalt thou find a summer home and rest,
And scream among thy fellows; reeds shall bend
Soon o'er thy sheltered nest.

Thou'rt gone, the abyss of heaven
Hath swallowed up thy form; yet, on my heart
Deeply hath sunk the lesson thou has given,
And shall not soon depart.

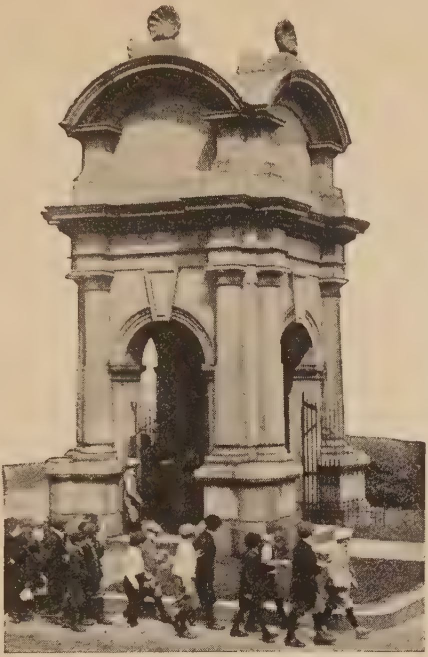
He who, from zone to zone,
Guides through the boundless sky thy certain flight
In the long way that I must tread alone,
Will lead my step aright.

WILLIAM CULLEN BRYANT

STORIES OF AMERICAN HISTORY

OUR NATIONAL SHRINES

Little Journeys to Historical Places



Plymouth Rock in Its Shrine

Plymouth Rock lies today where it laid 300 years ago, on the edge of the water of a small bay that is still a harbor for fishermen. But the rock is sheltered now under the stone canopy of a small classic temple.

BEFORE the great European War of 1914, most Americans who had money and leisure for travel, turned their backs on the United States and went to Europe. It is true that our country is new and crude. We have nothing like the ancient cities, palaces, castles and cathedrals of the Old World. We cannot match its galleries filled with long accumulations of art; its buried cities, temples and sculptures that have been unearthed; its picturesque ruins, nor the quaint hamlets and national dress that are parts of a storied past. And we very rightfully have a feeling of ownership in everything that has been preserved in the countries of our ancestry, for our forefathers had a hand in making and keeping whatever is cherished there today.

Seeing America First

Our mistake was in thinking that America has little of historic interest that is worthy of our love and pride. Then the war, by stopping tourist trips abroad, sent us on voyages of discovery, and on pilgrimages to forgotten shrines of our own land. Many people from the East went to San Francisco's Panama Exposition and saw the old Spanish missions of the Pacific Coast for the first time. Others returned to their childhood homes "back East" and reexplored the "land of the Pilgrim's pride." Wedding journeys led to Washington, instead of to London and Paris. Thousands spent winter weeks along the old Spanish and French Gulf Coast; and entire populations in the Middle West revived memories of brave deeds in historical pageants.

Great Variety of Places of Interest

We suddenly discovered what travelled foreigners have long declared, that we have a national capital as beautiful and interesting as any in Europe; that the Hudson River is as picturesque and almost as storied as the Rhine; and that there are few regions in the United States that lack their places of romantic and historic interest. We have a rock as celebrated, in its way, as Gibraltar; a bridge of world-wide fame; battlefields where heroes fell for noble causes; houses in which great men were born, or where they lived and died; old towns founded by early explorers, and mountain peaks and journeys' ends that mark the limit of human courage and endurance. We have a cracked bell that proclaimed liberty to a listening world; halls that once rang with patriotic eloquence, and mission churches planted by faith in the savage wilderness.

Let us begin with Boston. You could spend a month in this chief city and seaport of New England, and, unless you had a guide-book, and made the best use of your time, you could not see half the things and places connected with Colonial and Revolutionary history. To see some of them you would have to take a short journey. Every year quite fifty thousand people visit Plymouth, the seaside village where the Pilgrims landed from the Mayflower in 1620. It lies thirty-seven miles south of Boston, and can be reached by train, boat, or by automobile.

Plymouth and Its Famous Rock

The chief object of interest here is the granite boulder used by the exiles as a stepping stone from their rowboats to the bleak shore of the New World. It lies today where it lay three hundred years ago, on the edge of the water of a small bay that is still a harbor for fishermen. But the rock is sheltered now, under the stone canopy of a small classic temple.

The rock, so honored, is of dark gray granite, flecked with mossy green and sparkling with particles of black mica, broken from some mountains of Northern New Hampshire, by the glacial cap that once covered New England. It was carried down to this sandy shore by the slowly moving flood of ice. It is only one, and probably not the largest, of many similar boulders and smaller rocks of the glacial drift that strew the soil of southeastern Massachusetts.

At the beginning of the Revolution that rock was taken to Liberty Pole Square. In hoisting it to a truck to be drawn by twenty decorated oxen, it fell and was broken in two. Daniel Webster delivered one of his most famous orations over it, at the celebration of the second centennial of the landing of the Pilgrims, in 1820. In 1834, it was removed to a place of special honor before the door of Pilgrim Hall

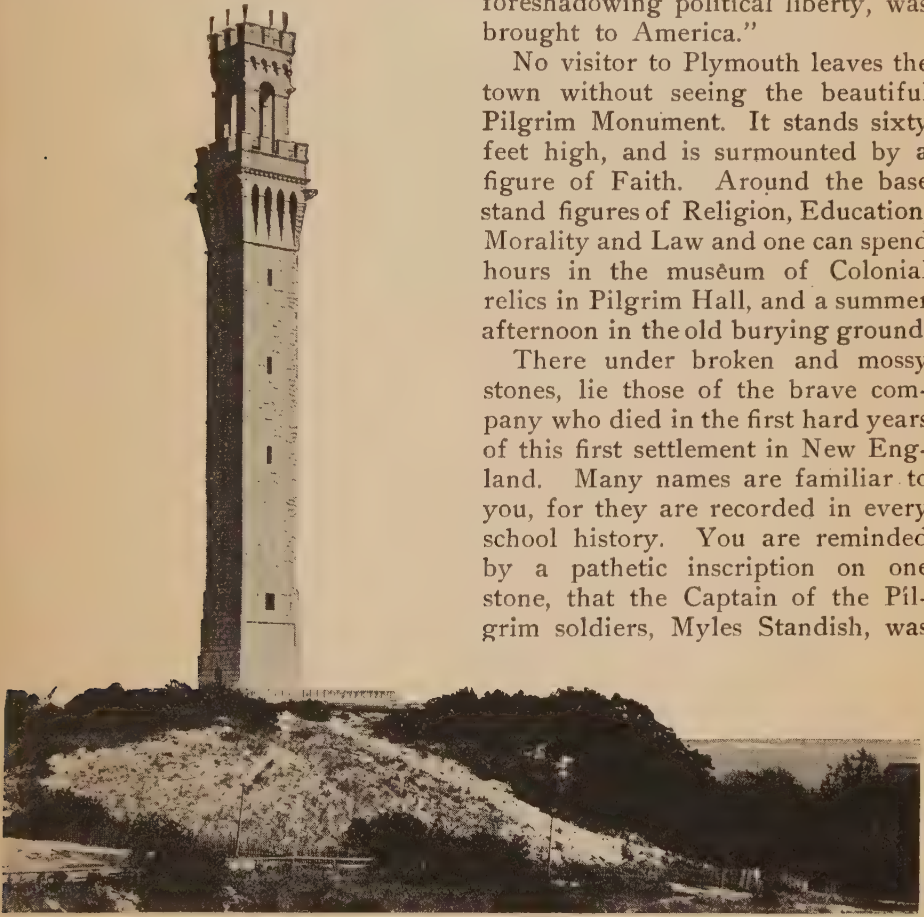
School boys and girls who were descendants from the Pilgrims of the Mayflower, formed an escort of honor, in Puritan dress. Then in 1880, it was taken back to its old resting place on the shore. The two pieces were cemented together and the temple was built over it.

Lincoln's birthplace is the only other humble thing in America that has been so distinguished. In our sketch of Lincoln we told you about the Memorial Hall of white marble, at Hodgensville, Kentucky, which encloses the decaying log cabin in which our great president was born. After returning from his tour of the world in 1877, General Grant stood uncovered before Plymouth Rock and said:

"This granite boulder is more inspiring than any National Monument I have ever seen. It marks the spot where religious freedom, foreshadowing political liberty, was brought to America."

No visitor to Plymouth leaves the town without seeing the beautiful Pilgrim Monument. It stands sixty feet high, and is surmounted by a figure of Faith. Around the base stand figures of Religion, Education, Morality and Law and one can spend hours in the museum of Colonial relics in Pilgrim Hall, and a summer afternoon in the old burying ground.

There under broken and mossy stones, lie those of the brave company who died in the first hard years of this first settlement in New England. Many names are familiar to you, for they are recorded in every school history. You are reminded by a pathetic inscription on one stone, that the Captain of the Pilgrim soldiers, Myles Standish, was



The Pilgrim Monument at Provincetown

The Pilgrim monument stands on the spot where the Pilgrims made their first, though not their permanent, landing in America. It is near Provincetown, Massachusetts. The monument is in the Italian Renaissance style. It is a little over 252 feet high, not counting the foundation, and is built of massive granite blocks. Each corner is reinforced by six twisted steel rods extending from the foundation clear to the top of the tower. Four stout steel bands are placed at intervals along the tower to strengthen it further.

The Bridge at Concord

It was at the point where this bridge stands that the English soldiers were halted by the Minute Men. The bridge, as you can see, has undergone a good deal of repair since that time. At the north end you can see French's statue of the "Minute Man"; a farmer boy in bronze who has dropped the plow handle and seized his gun.

soon bereft of Rose, his sweet English bride, and left a lonely, broken-hearted man.

The Bridge at Concord

What the Bronze Tablet Tells

Twenty miles north of Boston, between the villages of Concord and Lexington, a small wooden bridge, on stone piers, spans the Concord River. In appearance it differs very little from hundreds of other bridges in America, but it is one of the most famous little structures in the world. On a bronze tablet at the Lexington end, is recorded the fact that here, on April 19th, 1775, was shed the first blood of the Revolution.

The smallest history tells the story of how eight hundred British regulars were sent from Boston to capture, or destroy, the arms and ammunition collected by the Minute Men at Concord. By his midnight ride "through every Middlesex village and farm," Paul Revere alarmed the country. The Red Coats were halted at the bridge, and the stone walls that fenced the fields were soon lined with patriots. A third of the British were killed and the rest were chased back to Boston So here is where:

"The embattled farmers stood,
And fired the shot heard 'round the world."

The whole neighborhood is historic. On the village Common of Lexington stands a beautiful monument which bears the names of the eighty-eight Minute Men who fell in the battle. And north of the bridge is Daniel Chester French's statue of The Minute Man. A farmer boy in bronze, he has dropped the plow handle and seized his gun. The town of Concord, also, is famous as the home of Emerson, Hawthorne, Thoreau and Louisa Alcott, and the houses where they lived and wrote their books are always pointed out to visitors.

You can return to Boston through Cambridge, a western suburb of the city, and see venerable Harvard University, and the historic elm tree, under which Washington took command of the Continental Army in June, 1775. He made his headquarters in a beautiful Colonial mansion—Craigie House. This, very wonderfully preserved, is now a literary as well as a historic shrine, for it was the Cambridge home of the poet Longfellow. A memorial filled with relics, it is open to the public. But Cambridge is so rich in associations that it needs a day to itself, and so does the old seaport city of Salem, with its customs house and the places made famous by Hawthorne's romances.

The Minute Men and the Famous Hill

After seeing Concord and Lexington one should return to Boston over the road followed by the twenty thousand Minute Men who camped on the hills north of the harbor, and fought the battle of Bunker Hill.

Bunker Hill Monument

General Gage had ten thousand British regulars in Boston, many cannon, and armed naval vessels in the harbor, while the patriots had only their old flintlocks and scant supplies of powder. Nevertheless they fortified Breed's Hill, an eminence one hundred feet high, and connected with Bunker Hill by a ridge. General Gage decided to drive this "rabble," as he called them, from their earthworks. From hills, upper stories and decked house tops, all Boston watched the fight. Three times the British swept up the slope, only to be driven back by sheets of rifle fire. Then, their ammunition exhausted, the patriots retreated, with a loss of General Warren and four hundred and forty-nine men. The British did not pursue them for they had more than a thousand of their dead to bury.

A Lost Battle that Helped to Victory

The most conspicuous object in the landscape of Boston today is the tapering monolith of granite known as Bunker Hill monument, built to commemorate a lost battle that was a dear victory to our oppressors. All the colonies were soon in arms, rallying to the help of the patriots who, with their gunstocks, stones and bare fists, had defended their liberty against the King's cannon. The monument rises two hundred and twenty-one feet above the center of the earthworks that were thrown up on the hill. The corner stone was laid by the Marquis de Lafayette, on the fiftieth anniversary of the battle, and Daniel Webster was the orator of the day. Since its completion in 1842, there have been few days in which visitors have not toiled up the nearly three hundred steps within the tower. From that dizzy height there is a panoramic view of one of the most historic landscapes in America.

While these brave deeds were being done in Boston, events of equal importance were going forward in

Philadelphia. News of the battle of Lexington stirred all the colonies to action. Within three weeks the Second Continental Congress assembled in the old State House of Pennsylvania Colony, and declared war on England. And a few days after the battle of Bunker Hill Colonel George Washington was elected Commander in Chief of the Continental Army. History was made fast in those stirring days. A year later the Declaration of Independence was signed, and proclaimed.

Independence Hall and Liberty Bell

Where Independence Was Born

The building that had the honor of being the birthplace of our nation is still standing in the heart of the city of Philadelphia. It is a plain, two-storied, brick structure, of a good Dutch Colonial design, and so well built that it has a solid, dignified appearance today, although it was erected many years before the Revolution began. It was long the largest and handsomest public hall in America.

Broad steps lead up to a wide entrance door in the middle of the front. This is flanked by four windows on either side, fitted with many small panes of glass. A row of nine windows above lights the large rooms of the upper floor. The roof slopes gently up from the four sides to a flat, railed platform. Every colonial seaport had its decked housetops from which people watched arriving and departing sailing vessels. From the middle of this State House deck a square clock tower and bell cupola springs. This was built in 1752 when a bronze bell was brought from London to hang in it.

Memories of Continental Congress

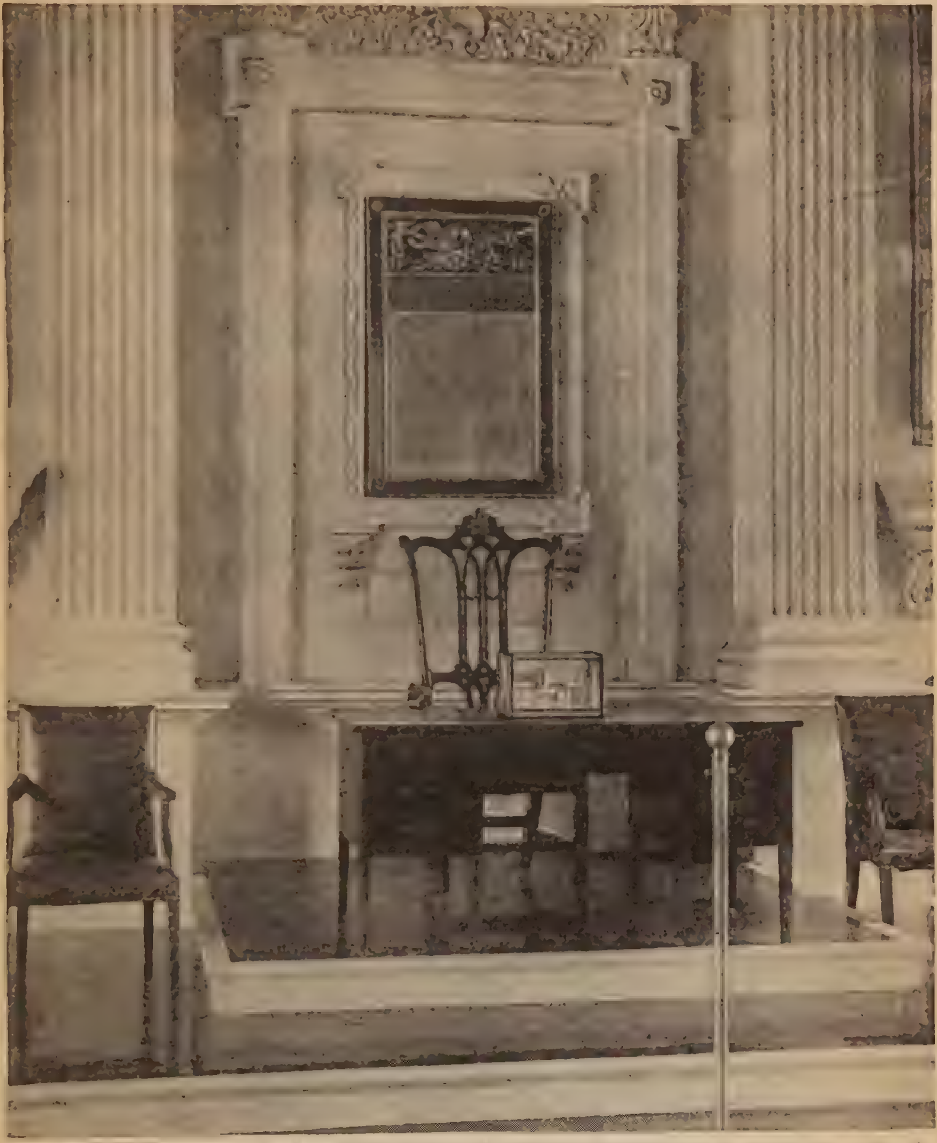
The Continental Congress held its sittings in the east room on the main floor. The flooring of broad, white oak planks has had to be renewed, but the chairs and tables are historic relics, and around the exact copy of the Declaration of Independence on the wall hang the portraits of nearly all the signers of the famous document. The whole building is a historical American portrait gallery. Upstairs are pictures of many officers of the Continental Army, in their uniforms of blue and buff, some wearing cocked hats. There are portraits of distinguished foreigners who fought with Washington, and of members of the Constitutional Convention of 1787. "Lady" Washington smiles down from one wall, and the portrait of King George III, who lost this splendid colonial empire for England, hangs above a landing of the staircase.

There are, besides, many relics: a piece of William Penn's "Treaty Elm"; two of his chairs; Washington's sofa and the church pew that he used when president; Benjamin West's painting of Penn's treaty with the Delaware Indians; old books, newspapers, posters, letters, colonial costumes, the original rattlesnake flag, and Franklin's first lightning rod. And tucked away in a small hall at the rear of the stairs, where it can be rescued through a back door in case of fire, Liberty Bell stands on a truck.

The Prophecy in the Old Bell

It is a strange thing to find this inscription: "Proclaim Liberty Throughout the Land, and Unto all the Inhabitants Thereof," around the rim, for the prophetic legend was cast in the bell nearly a quarter of a century before its wild and joyous clamor called the people to In-

Where the Great Declaration Was Signed



John Hancock sat in the high-backed chair behind this very table when he wrote his big, bold signature across the bottom of the Declaration of Independence. The table is Sheraton in design and has real drawers on one side, false ones on the other. It was made by an unknown cabinet-maker in Philadelphia about 1745, for the use of the Assembly of the Province of Pennsylvania. That body gave the Continental Congress, which drew up the Declaration of Independence, the use of its quarters in Philadelphia and that is how the famous document came to be signed on this table.

The high-backed chair is in the other famous English style of that period—Chippendale. It is hand-carved with designs which are typical of the future of this country—wheat stalks, waterfalls, horns of plenty, a sunburst and mushrooms. The two chairs at the sides have mahogany frames and were originally upholstered in horse-hide studded with brass tacks. Like the table, they are Sheraton, and have the graceful lines characteristic of that style. The legs of the high-backed chair show a little Chinese influence in the abundance of their decorations. This furniture is part of the collection of interesting historic relics in Independence Hall, Philadelphia.

The Famous Charge Across the Wheat Field

One old soldier sitting on the rocks at Gettysburg is pointing out where General Pickett made his famous charge across the wheat field, at the fiftieth anniversary of the great battle. One of the most touching sights at the celebration was that feature of the program when a number of the old men who took part in that charge came trotting over the same wheat field carrying umbrellas instead of bayonets as they did on that momentous third day in July, 1863. At what is known as the "Wide Angle," where so many brave soldiers fell, these survivors of Pickett's men were received with outstretched arms and cheers by the old survivors of the army and navy; "You Yankees," as the heroes of this second charge were called, had tears in their eyes.

dependence Square to hear the first reading of the Declaration of Independence. In tolling it for the death of Chief Justice Marshall in 1835, the bell was cracked, and it has not been rung since 1842. In 1876 it was lowered from the cupola, to be exhibited at Philadelphia's Centennial Exposition, and has never been rehung. The people of distant parts of the country were so eager to see the sacred old voice of liberty, that it was loaned several times. But hereafter it will remain at home. It is too precious a relic to run the risk of journeys by land and sea. Visitors to Independence Hall stand with hats off, and gaze with reverence upon the old cracked and time-blackened bronze bell that so strangely fulfilled its mission to "Proclaim Liberty."

On the Field of Gettysburg

If you should ever go through Philadelphia to Washington, take the longer route, southwestward, and break the journey at Gettysburg. This site of the most famous battlefield of the Civil War is now a national park, and the consecrated burial ground of the many thousand soldiers from seventeen states who perished there. It lies directly north of Baltimore, and just within the southern boundary of Pennsylvania.

Any history will give you an account of this terrible battle which raged during the first three days of July, 1863, over twenty square miles of a beautiful landscape of hills, woods and winding streams. The Confederate and Union Armies engaged each numbered about 80,000

Where Brave Men Fell

men; and when General Lee began his retreat, on the saddest Fourth of July our country ever experienced, he left 30,000 brave boys in gray, dead or wounded, on the field. The Union army suffered a loss of 23,000.

Immediately after the battle, Governor Curtin of Pennsylvania organized field hospitals to care for the wounded; and Mr. David Wills of Gettysburg marked the graves of the dead. Seventeen states hastened to appropriate money to buy a burial plot in the center of the battlefield. Standing on a beautiful eminence from which there was a wide view, it was named Cemetery Hill. A landscape gardener planned the grounds, and to the unknown dead was assigned a plot in a vast series of semi-circles, in which each grave was marked by a small head stone. A beautiful monument now rises above this city of the dead.

Lincoln's Immortal Speech

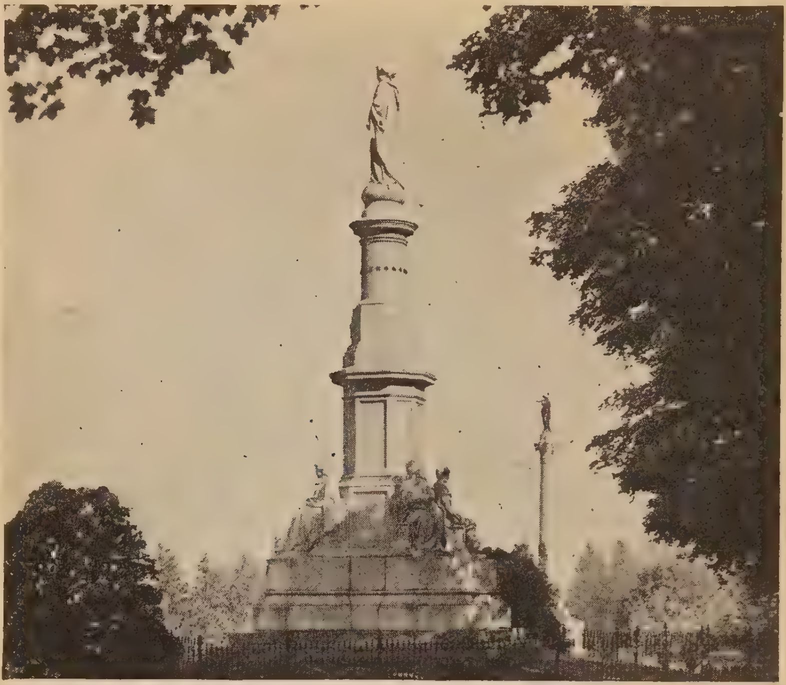
On November 19th, 1863, four and a half months after the battle, Gettysburg Cemetery was dedicated, and President Lincoln made his immortal address of fewer than three hundred words. The speech was cast on a bronze tablet and set on the face of the monument which, towering sixty feet above the graves, is surmounted by a statue of Liberty holding a flag and a laurel wreath.

It seemed that the country could never do enough to honor the fallen on this field of supreme sacrifice. When the war was over, southern states marked the Confederate lines of battle, and northern states the positions held by their regiments. Then Congress purchased 1380 acres, more than two square miles of country, covering every hotly contested point of the battle. Tablets were set up, bridges and steel observation towers were built, cannon

General View of the City of the Dead

This is a general view of the National Cemetery. It shows the New York State Monument in the background and the National Monument on the right. The National Monument is sixty feet high surmounted by a figure of Liberty. In the marble around the base are designs symbolizing war, history, peace, and plenty. This statue marks the spot where Lincoln delivered his immortal speech when the cemetery was dedicated in 1863.

To Honor Fallen Heroes!



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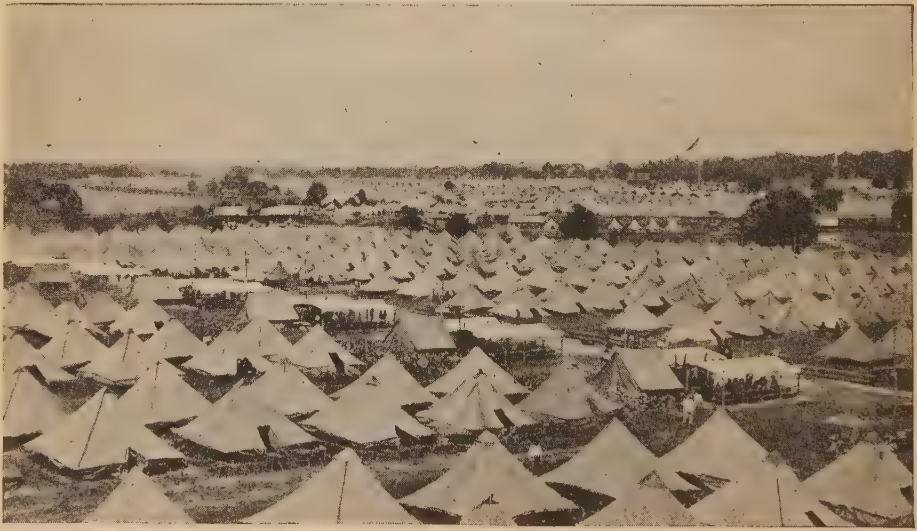
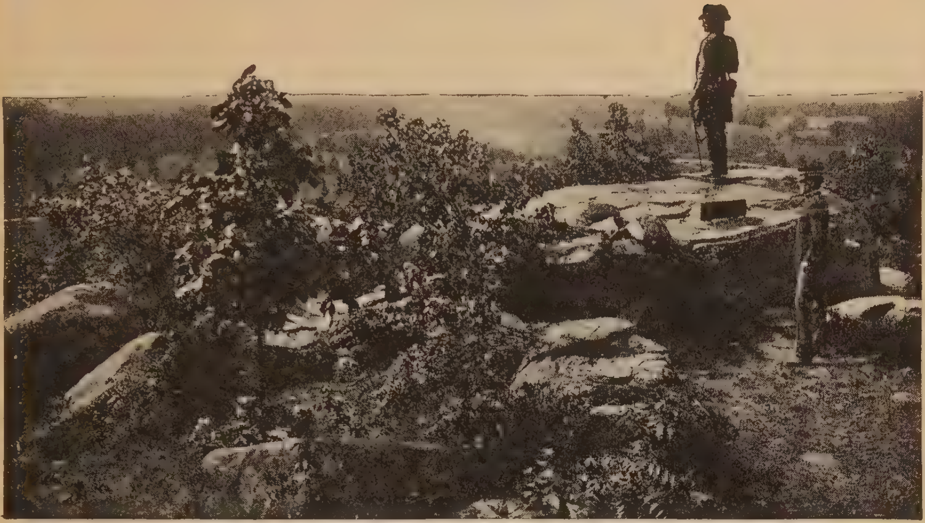
The National Monument at Gettysburg is a beautiful, symbolic group. In the background you can see the splendid memorial erected by the State of Pennsylvania.

The City of Seven Thousand Tents



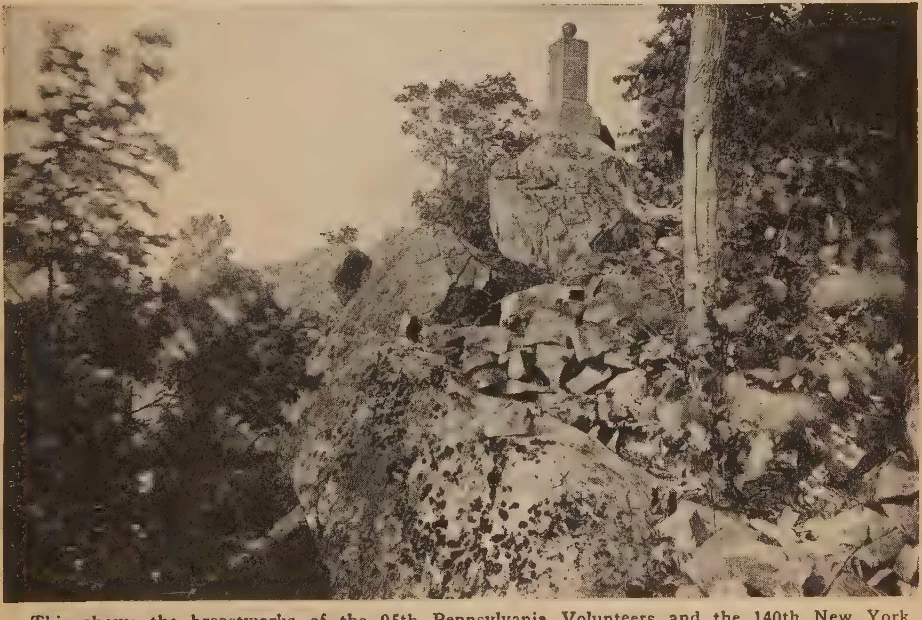
What a tremendous "City of Tents!" More than 7,000 tents were pitched at the great Gettysburg anniversary in July, 1913, under the auspices of the War Department.

General Warren Watching the Battle



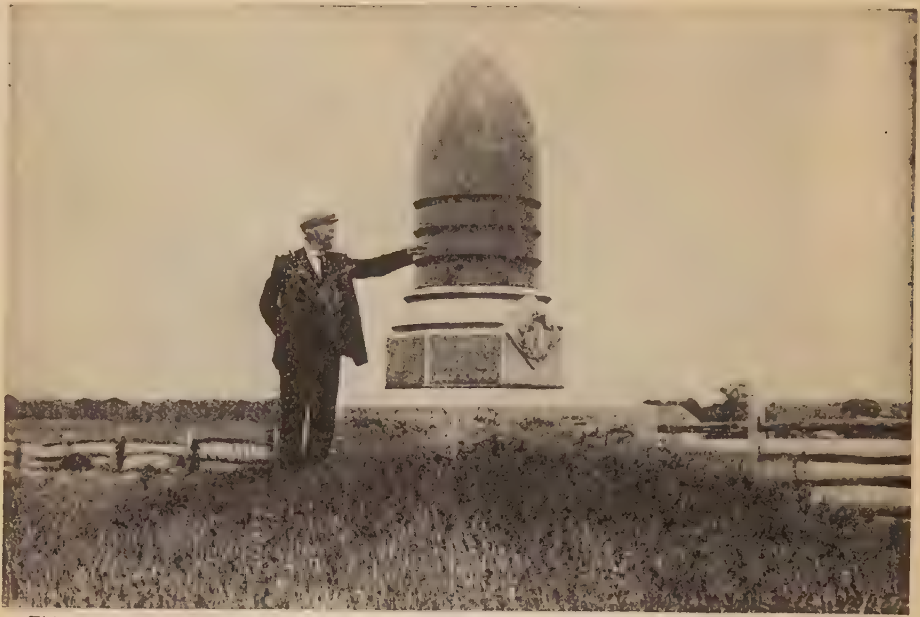
Don't you have to look twice to tell that one of these men is a statue? The man overlooking the field is General Warren, just as he stood watching the battle from Little Round Top. He is standing right on the spot from which he watched the battle. You can tell that he has a field glass in his hand—you can just see the edge of it—and on his right hip hangs the case that holds it. General Warren was Chief of Engineers of the Union Army when the Third Army Corps was attacked July 2nd. He rode Little Round Top and surveying the field, much as you see him here, saw at once the importance of holding this hill. He also saw a column of Confederates under General Law advancing to seize it. It was then occupied only by a signal corps.

How Little Round Top Was Held



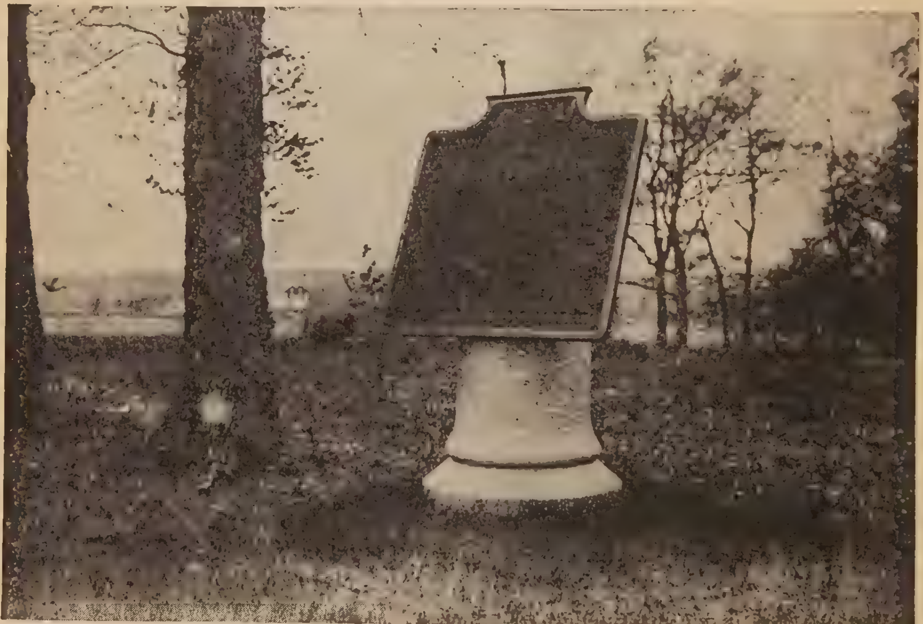
This shows the breastworks of the 95th Pennsylvania Volunteers and the 140th New York Volunteers on the front slope of Little Round Top. It was breastworks like this, and the advantages of the position, that enabled the Union soldiers to hold Little Round Top in spite of the desperate attacks of the Confederates.

The Minnie Ball Monument



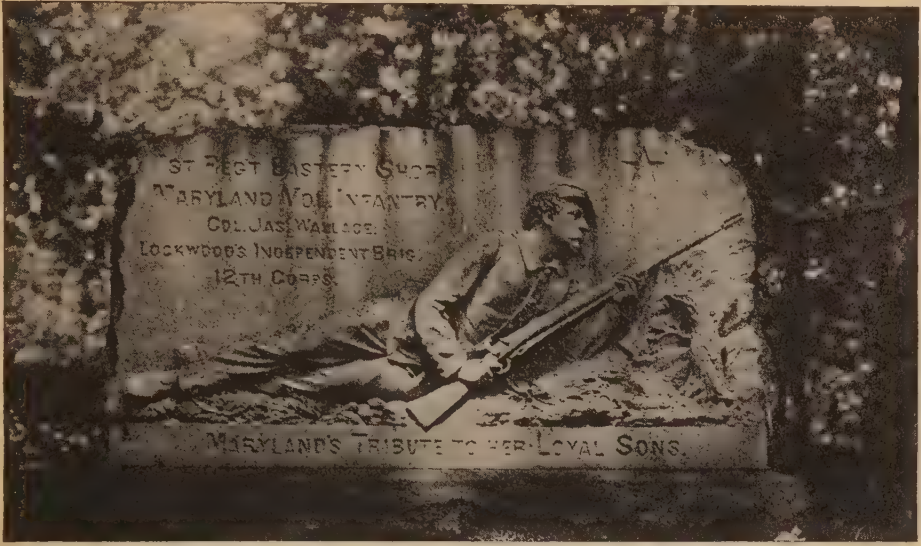
This monument to the 7th New Jersey Volunteers is a reproduction in granite of the minnie ball used by the Union forces. Captain Geo. W. Zeigler, a noted Union veteran, is here pointing out the scene on the battlefield where the soldiers fell, to whose memory this monument is erected.

Monument to the Confederate Dead



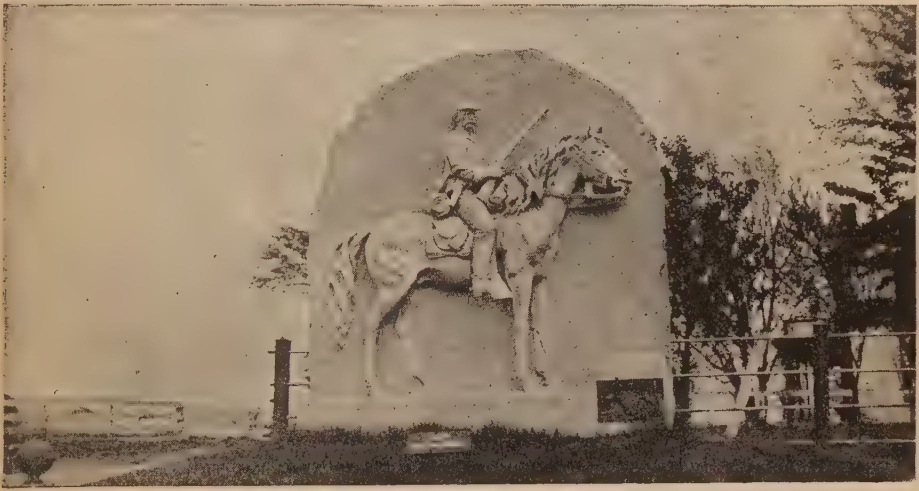
This is one of the typical Confederate monuments to be seen in all parts of the Gettysburg field. The inscription you see here is to Scales's Brigade of North Virginia, and the 13th, 16th, 22nd, 34th and 38th North Carolina Infantry.

One of Maryland's Tributes to Her Sons



This is a memorial of the members of the First Regiment. Eastern Shore. Maryland Volunteer Infantry, and shows the sharpshooter behind the breastworks. As the sharpshooters are famous for their marksmanship and were of more value than the average soldier, they did their shooting from hidden places, but they were really in quite as much danger as the men in the open field, for there were comparatively few of them and the enemy was apt to locate their hiding places and turn their fire upon them.

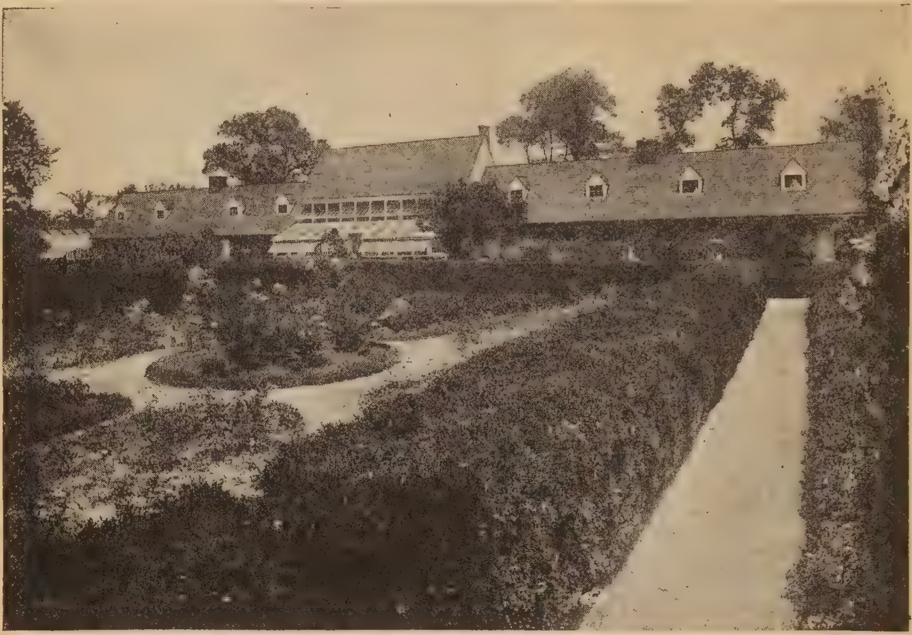
Monuments to the Cavalryman's Noble Friend



Here's another Pennsylvania monument, as you will see by the state coat-of-arms. It was erected to the 17th Pennsylvania Cavalry and stands on Buford Avenue in this great city of the dead. It is one of the most striking monuments in the field. Both the trooper and the horse are life size. You will notice in this cavalry monument, as in many others on the field, the noble horse is remembered as well as the man.

The most famous horse in the battle was General Meade's "Old Baldy," so called because he had a big white mark on his forehead and on down to the end of his faithful old nose. He was bought by General Meade in the fall of '61 and used continuously in all his campaigns. In the fighting of July 2nd he was seriously wounded and sent to the rear. He was slow in recovering and took no further part in the war, but was used by General Meade as a saddle horse for a number of years after the war. He survived his master many years and followed him in the funeral cortege to the grave.

The Garden at Mount Vernon



This is the part of the garden at Mount Vernon that contained the flowers. And it, no doubt, looks very much as it did in Washington's day, for the life of a country gentleman was his delight, and he kept a personal eye on every detail of the upkeep of his beautiful estate.

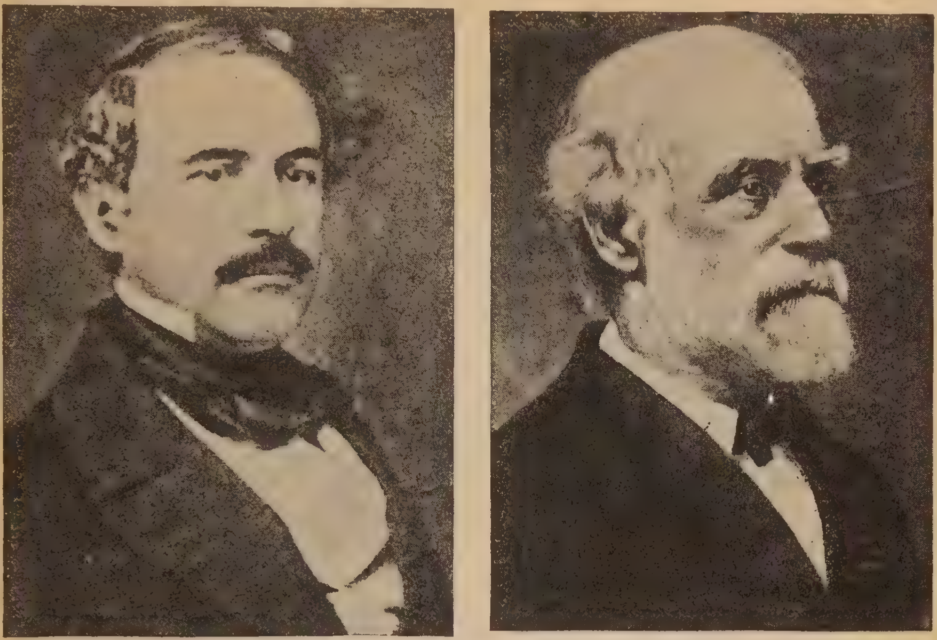
marked the positions of batteries and equestrian statues of the commanders were cast in bronze. Then Gettysburg was made a National Park, with an annual appropriation of $75,000 for its care.

Today, seventeen miles of roads and winding avenues have been opened, three hundred and twenty monuments unveiled, and two hundred and fifty cannon mounted. The shattered stone walls have been rebuilt and the woods replanted. Military maps guide visitors to Little Round Top, the Peach Orchard and a dozen other famous spots. Old soldiers hold their reunions here; raise their tent cities and camp with their dead comrades. In all the world, perhaps, there is no other battlefield so reverently cherished as the field of Gettysburg.

The Home of Washington

Fifteen miles down the Potomac from the National Capital lies Mount Vernon, the plantation home of Washington. April or May is the best time to visit it, for then the valley wears its dress of tenderest green, the air is soft, and the sun shines warm on the rippling water of the historic river. For miles you can look back and see the dome of the Capitol Building lifted two hundred and sixty-eight feet in the air, and farther away still, on a clear day, the monolith of the Washington monument can be seen cleaving the sky to a height of five hundred and fifty-five feet. It brings a thrill to every American heart to think that the loftiest memorial ever erected to any man has been raised to the father of our country.

Two Portraits of General Lee



These two portraits of Robert E. Lee are very interesting. The first shows him as a young man in the days before the Civil War, and the other after he became President of Washington College, now Washington and Lee University. On graduating from West Point, which he entered at eighteen, he joined the United States engineering corps. He took part in the Mexican War and was repeatedly distinguished for his ability and courage. After the Mexican War, he resumed his work as engineer in Washington and in Baltimore. In both portraits we can see great force, intellect, and character. What he said to his son when he entered him at West Point in 1852, he had previously said to himself: "'Duty' is the sublimest word in the language; you can not do more than your duty; you should never wish to do less." It was his conception of his duty that led him to espouse the cause of his native state, rather than that of the nation at the beginning of the Civil War.

Trolley cars and boats always stop at Alexandria, Virginia, to give tourists time to see Christ Church, a quaint, old, ivy-covered Gothic structure of stone where Washington, and, after him, Robert E. Lee worshipped. Here, too, is Arlington, once the beautiful home and great estate of the Lee family, but now a national cemetery, where thousands of soldiers of the Civil War lie buried.

Mount Vernon has a pier of its own, just as in the days when the tobacco from the 8000 acre estate was shipped to London. The house, a plain wooden mansion a hundred feet long and fronted by a two-storied, pillared veranda, stands on a sloping lawn on a bluff that rises two hundred feet above the Potomac. This elevated situation gives it an extended view of the river, and the bordering hills and meadows of Maryland and Virginia. Washington loved this charming landscape which greeted his eyes every morning. But he left it at the call of duty, in May, 1775, and saw very little of it until after his retirement from the presidency twenty-two years later.

The great plantation was long ago cut up into numerous farms. The mansion and the two hundred acres around it were bought by the ladies of the Mount Vernon Association, and restored to their old condition. The lawn is still shaded by trees planted by Washington and by distinguished guests; and every summer Mrs. Washington's flower garden is gay with her favorite blossoms.

The house never was as beautiful or impressive as Arlington, Westover, or many other colonial mansions of the Old South, but it was a well-built, commodious residence, and the eight tall and massive pillars that support the veranda roof were each squared from a single forest tree. And it was handsomely furnished, as was suitable to a family of wealth and position. Many of the fine pieces of mahogany furniture, and elegant appointments of living, have been found and restored to their old places.

If Washington had been as great an Englishman as he was an American he would have been buried in the chill splendor of Westminster Abbey, far from the home he loved and the wife of his youth. We are glad he lies here, in a tomb near the carriage gate, under the sun and stars and within sound of the rippling waters of the Potomac.

The Lincoln Home in Springfield

The only other house in our country that arouses the same sentiments as Mount Vernon, is the Lincoln Home in Springfield, Illinois. This is a plain, two-storied frame house of about ten rooms, such as any country town doctor or lawyer might own. It stands on the corner of Jackson and Eighth Streets, several blocks from the public square, and when built probably had plenty of open prairie around it. Now the section is closely built up with modest homes, and the Lincoln house is crowded on its small frontage. The lot is a couple of feet higher than the sidewalk, the rise faced with stone and topped with a picket fence. Only a narrow strip of lawn separates the fence from the house, and a flight of steps leads up through the gate to the entrance door.

Memories of the Great Man

A connected parlor and library open from one side of the middle hall, and from the other a sitting room and dining room. There is nothing of intrinsic beauty or value in the house or its contents, as there is at Mount Vernon. But it is the place that sheltered our martyred president for many years, and now it is a museum of relics which recall him to our memories. The place is filled with the furniture he used, the books he read, the letters he wrote, his numerous portraits and photographs, the hundreds of books written about him, the tributes paid to him, and pictures of the many monuments, bas-reliefs and tablets that have been set up in his honor.

An endless procession of people sit at Lincoln's old walnut secretary, and inscribe their names in the visitors' book, and then spend hours studying the eloquent records of his simple, heroic life and tragic death. It brings one nearer to Lincoln to realize that he spent many obscure years of quiet devotion to ordinary duties in this plain American home in a small Western city. In striking contrast to the circumstances of his every day life is the splendid marble monument which towers above his tomb in Springfield cemetery.

A Visit to Old Jamestown

There are two comfortable ways of travel by which you can reach

Arlington, The Home of Lee

The home of the Lees at Arlington was, as you see, built in the colonial style with a high porch and Grecian pillars of the Doric order. Arlington was the beautiful estate of Mary Custis, great granddaughter of Martha Washington. It lies opposite the city of Washington on the Potomac and is now used as a national cemetery. There Lee lived for 30 years and until the outbreak of the Civil War. Being so near Washington, it was directly on the line of defense of the Capital and immediately fell into the hands of the North.

A Portion of the Servants' Quarters at Arlington

A regard for the comfort and well-being of everyone for whom he was in any way responsible, was one of the finest traits of Lee, and we can see here what comfortable quarters were provided for the colored people on the Arlington estate. The affectionate title, "Marse Robert," which they always used in speaking of or to their master, became the one which was applied to the great military leader by the people throughout the South.

the deserted site of this first English settlement in America. One is by railway through Richmond, Virginia. The other is to take one of the excursion steamers which ply the historic waters of Chesapeake Bay, at Baltimore or Washington. The water route takes you to a number of places connected with the Revolution, the War of 1812 and the Civil War. And then, running thirty-five miles up the broad estuary of the James River, you can land on the same swampy peninsula, jutting from the north bank, on which the London Company landed its ill-fated colonists in May, 1607.

Water Trip to the Historic Site

Jamestown Point is almost as wild and uninhabited today as it was more than three centuries ago, for the site is low and marshy. It was chosen for the settlement for the reason that a short stockade set up across the neck of the peninsula made it easily defensible against the Indians. It was convenient, too, to the sailing vessels of old days. So, although it was extremely unhealthy, The Point was occupied until 1700, when it was abandoned for the new capital at Williamsburg. Nothing marks the place now as the capital of Virginia colony for almost a century, except the fallen slabs in a weedy, briar-grown grave yard, and the crumbling tower of the little stone church in which the Princess Pocahontas was married to the English John Rolfe.

Williamsburg was the capital of Virginia until 1780, when, threatened by the army of Cornwallis at Yorktown, the seat of state government was removed to Richmond. The road northward to Williamsburg, from Jamestown landing, is lined with some of the oldest plantations in America, with their colonial mansions and clusters of negro cabins. It is such a busy, modern little town of 2500 people, today, that it is difficult to imagine it the center of stirring Revolutionary days in Virginia. But its principal thoroughfare is still named Duke of Gloucester Street, and there are the venerable buildings of William and Mary College, whose doors were opened to students in 1693. Thomas Jefferson is numbered among its alumni, and in the ancient Hall of Burgesses the future author of the Declaration of Independence was stirred by the fiery eloquence of Patrick Henry.

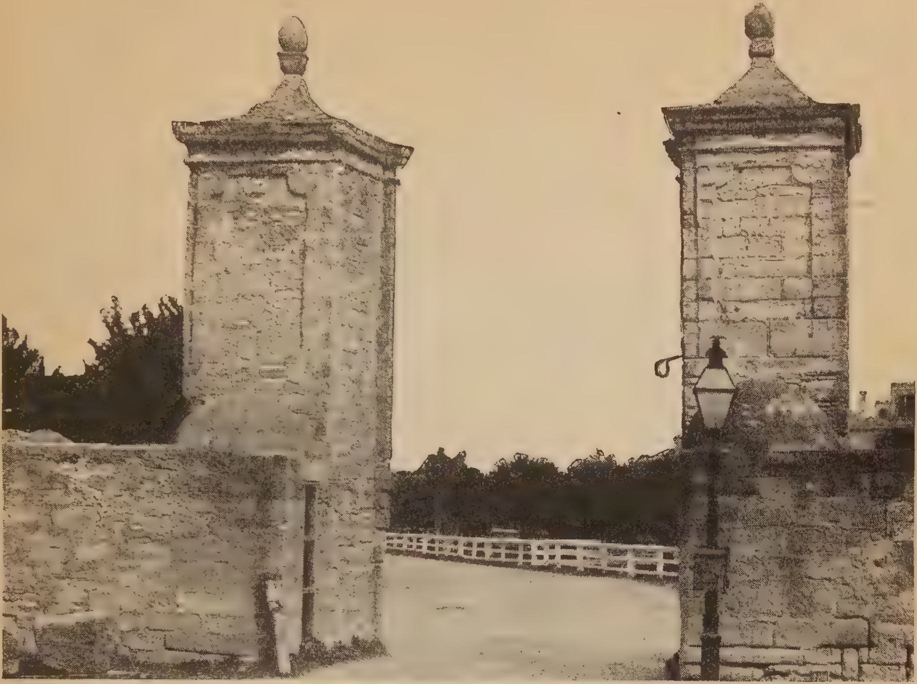
But, somehow, when we think of the ivy-covered church tower, and the neglected graves on the desolate marsh of The Point, we wish all those brave things might have happened in Old Jamestown which, for nearly a hundred years, kept the lamp of civilization burning in the wilderness of Virginia.

St. Augustine and the First White Settlement

No tourist to the east coast of Florida misses seeing this picturesque Spanish city, where, in 1565, was made the first white settlement in the United States. A popular winter resort, on the way to Palm Beach and Miami, it stands on Matanzas Sound, two miles from the ocean, and thirty-seven miles south of Jacksonville.

The Spaniards were not concerned about clearing farms and making homes. It was soldiers, gold seekers and missionaries who penetrated each new colony and built a beautiful little walled capital in the wilderness. St. Augustine, like Havana, had its fortress, its governor's pal-

The Old City Gates at St. Augustine



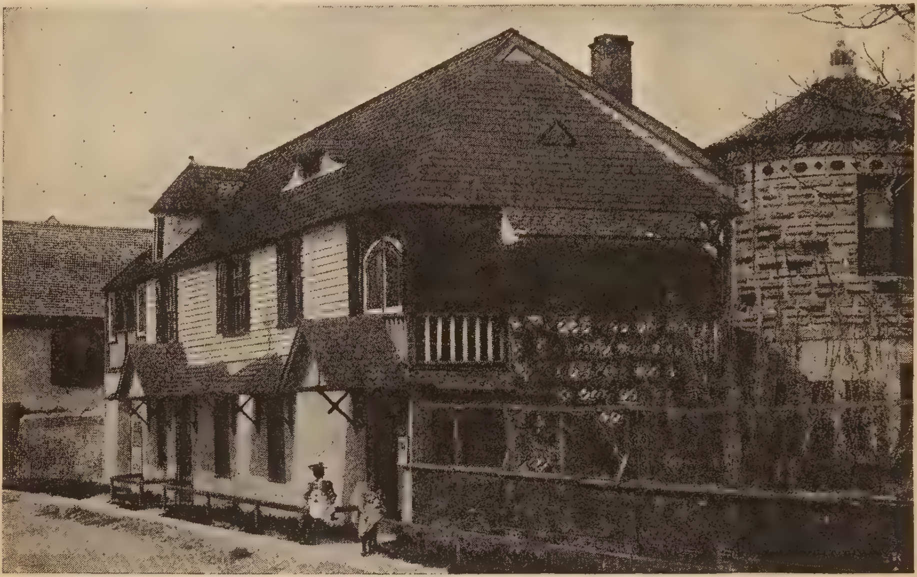
These gates are the most picturesque of St. Augustine's ruins. The two pillars are in the Moorish style of architecture and are surmounted by what the architects call "pomegranates" because they are shaped like the fruit of that name. The wall once extended from the old fort, a short distance to the east, across the peninsula to San Sebastian on the west, thus fortifying the town against all approaches by land. These gates stand at the end of St. George Street, the principal avenue of St. Augustine.

ace, its church and monastery, and many handsome residences. Native quarries of coquina, or shell concrete, a very hard stone as white as marble, were worked by enslaved Indians for quite a hundred years, to build St. Augustine. The fortress of San Marco, completed in 1742, was so well built that it is used today as Fort Monroe. The Franciscan monastery serves as barracks for our soldiers, and the post office is housed in the governor's palace. The old gate pillars, twenty feet high, with fragments of the ancient wall are still standing; the Spanish coat-of-arms is emblazoned on the ends of the bridge, and there is the black dungeon which, among its many prisoners, numbered the famous Seminole chief, Osceola.

How St. Augustine Was Built

The town is, today, as Spanish as any old city of Spain. Crowded, as it was, within stone walls, and at one time containing a population of twenty-five thousand people, it is full of narrow, cobble-paved lanes, overhanging balconies gay with blossoming plants, red-tiled roofs, patios filled with palms and oleanders, and tinkling with fountains. Many new buildings have been erected for the comfort and pleasure of the tourists who visit the place every winter, but hotels, casinos and the mile-long, seawall promenade, all built in the Spanish style.

The "Oldest House" in St. Augustine



The framed statement on the right of the entrance to the garden tells you that this is the "oldest house" in St. Augustine. But it is a good deal like the boy's jack knife. You remember it had entirely new blades and a new handle. So, probably, if the house which used to stand on this spot was still there it would be the oldest house in St. Augustine, but, as you can see, the weatherboarding and shingles are very modern. This kind of "improving" was done a good many years ago when the rich people who built villas for their winter residences in St. Augustine were pulling down most of the old houses, and the people of humble means followed their example by "remodeling." One proprietor of a boarding house had a picturesque old coquina wall pulled down because it obstructed his view, and put up a picket fence instead. It was even proposed to pull down those old city gates for the stone that was in them, but fortunately, they stopped at that and now nobody values the relics of the old days more than the people of St. Augustine.

Standing on the yellow sands, beside the blue water, drenched with sunshine, and shaded by dark magnolias and feathery palms, St. Augustine makes a strange, exotic picture, a vision of a vanished past. Except in the tourist season, when it is filled with pleasure seekers, it seems silent and deserted, for, with only five thousand inhabitants, three-fourths of the old houses are empty. A charmed city of dreams, it sleeps in the sun beside a semi-tropic sea.

The "Independence Hall" of Texas

Coming up from Mexico, the Spaniards founded a number of towns in Texas, New Mexico and Arizona, as you can easily see by the many Spanish names on any map of the region. Santa Fe, settled in 1582, is the second oldest city in our country, and the mission of San Miguel there is the oldest church in America north of the Rio Grande. But the mission church of Del Alamo, in San Antonio, is the most famous, although it was not completed until 1744. It is the Independence Hall of Texas.

Any resident of the city will point out the plain, old building with its massive walls of adobe, or sun-dried bricks. Once, no doubt, it had a garden around it, kept green by irrigation, for "Alamo" is the Spanish name of the poplar tree, or the cottonwood so common in our Southwest wherever there is water. But now the church stands in the heart of the city, shut in by streets of little shops and markets.

Texas, you know, was once a part of Mexico, and had to fight for its freedom from Spain. That was gained in 1821, but by that time a large part of the population of Texas consisted of emigrants from our southern states. These, used to the orderly, progressive government of the United States, found Mexican rule intolerable. So, in 1835, they began a revolution which lasted ten years. Then they set up a republic in Texas and asked for annexation to the United States. This involved our country in the Mexican War of 1845.

The Brave Fight at The Alamo

The most famous battle of Texas's long war for liberty was fought in San Antonio, and involved only one hundred and fifty of the bravest patriots of the state. Determined to hold the town against an army of several thousands of Mexicans under General Santa Anna, this little band of defenders took refuge in the Alamo, mounted cannon on its thick walls, and raised a new flag—a big white star on a striped field. Texas, today, is called the Lone Star State. Singing a new song: "Up with your banner, freedom," they waited for the attack.

One of the soldiers in this famous edifice turned into a fort was Davy Crockett, a frontiersman as bold and resourceful as Daniel Boone. His favorite phrase was: "Be sure you're right, then go ahead." Another was Colonel Bowie, after whom the Bowie knife was named. A third was the gallant young Colonel Travis. With such men the only answer to a demand for surrender was a derisive shout and a cannon shot. Through port-holes Crockett and other sharpshooters picked off Mexican gunners. The little garrison held out until food, water and powder were exhausted, and all but six men had been killed. When the Mexicans broke in, to put the rest to the sword, for they gave no quarter to prisoners, they found Crockett wounded but barricaded behind a heap of his fallen comrades, his sure finger on the trigger. Every one of that brave little band perished, but their souls went marching on. All Texas was roused to fight to the death for freedom from Mexican rule.

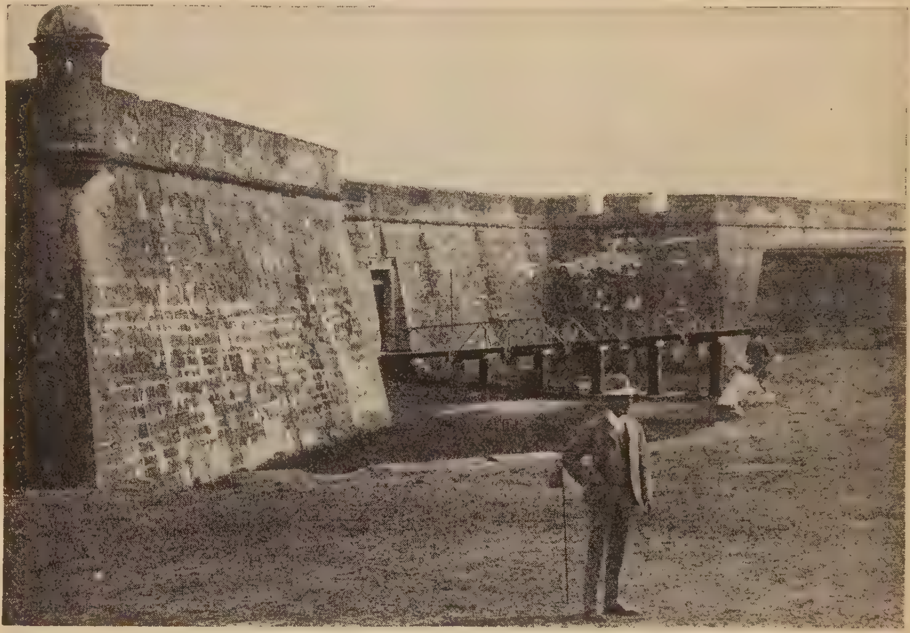
So this old mission church is the cradle of Texan liberty. Texas rangers went into every battle of the Mexican War with the rallying

Ruins of the Alamo at San Antonio

This is all that is left of the fort in which the men of Texas—only 150 of them, against 4,000 Mexicans—made their historic defense. The building was originally erected for a mission and was used for religious purposes until 1793. Then because its walls, as you see, were so thick and strong, it was converted into a fort.

cry: "Remember The Alamo!" The phrase is used in song and story, and wherever men urge one another to some supreme test of courage and lofty patriotism.

The Old Spanish Fort



Here you see the walls and the moat of the old Spanish fort at St. Augustine. The bridge which now spans the moat is a modern structure of pine, but in the old days at the gate there, which was the only entrance, was a portcullis with machinery for hoisting and lowering the drawbridge as they did it in Scott's poems and in story books of the Middle Ages. This bridge connected with another that extended part way across the moat. When you visit the old fort you can go through secret passages and into the dungeon just as you would in a story-book castle. And they show you the furnace for heating shot to make it as unpleasant as possible for an attacking party. The roofs and the floors of the fort are scored with the initials of the hundreds of tourists who have visited St. Augustine from time to time.

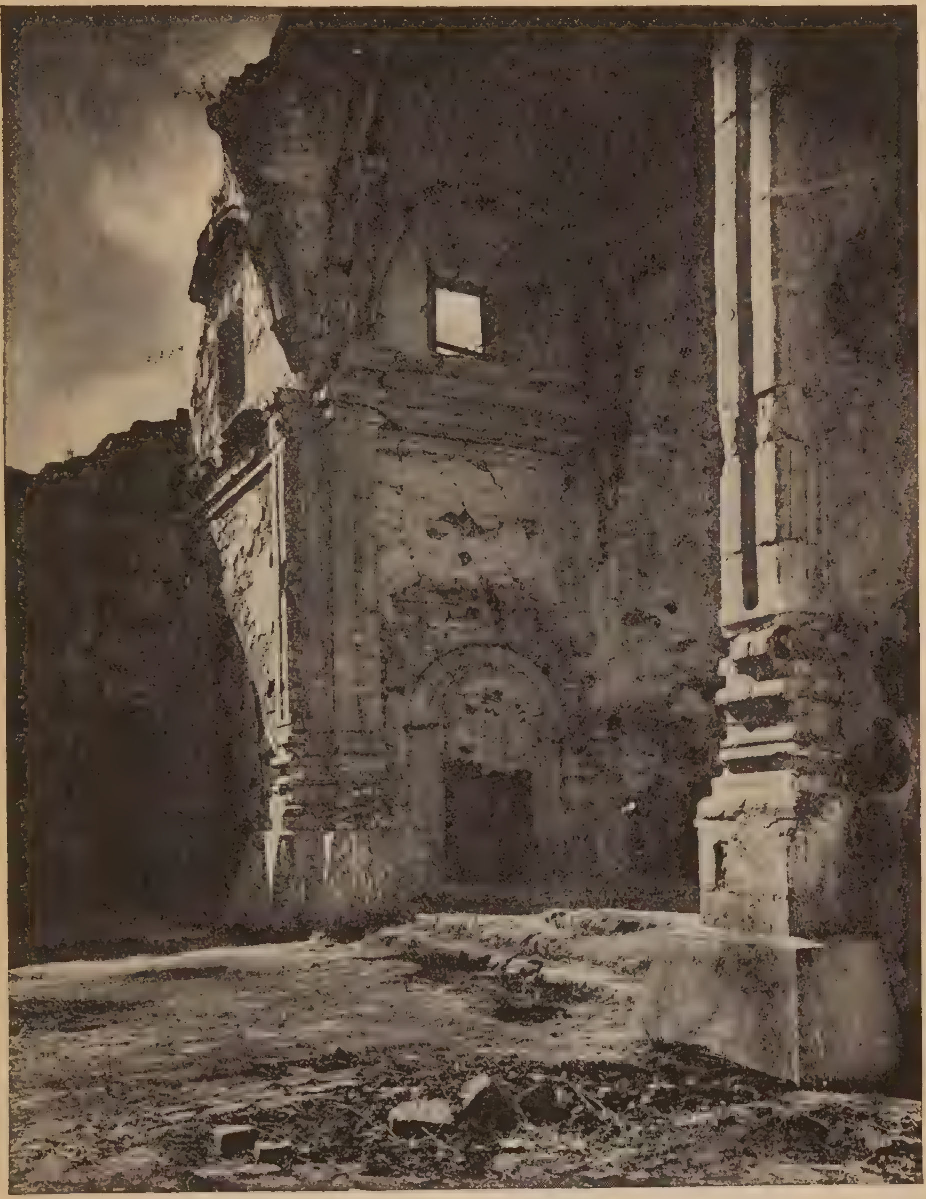
The Story of the California Missions

There are twenty-one Spanish missionary churches of varying size and beauty, and in various stages of preservation, scattered along the coast of southern California from San Diego to Sonoma, above San Francisco. They are all built as hollow squares, colonnaded or cloistered, with pillars supporting a series of round arches, and are roofed with tiles. All the rooms open on the patio, or inner court, with its garden and fountain. And each has its cells for the Brothers, its guest rooms, workshops, store rooms and school rooms. The good, simple Mission furniture is made in many of them, and Indian and Spanish Mexican boys and girls are taught the useful trades and household arts. Each, too, is the center of a large, populous and prosperous district, long cultivated, and rich in flocks and herds, grain fields and fruit farms. This is their story:

Great Work of Fra Junipero

Nearly a century after the settlement of Santa Fé, Fra Junipero Serra, a Franciscan friar, was sent from Mexico City with the magnificent plan of building this long chain of mission churches and converting

One of the Ruined Chapels

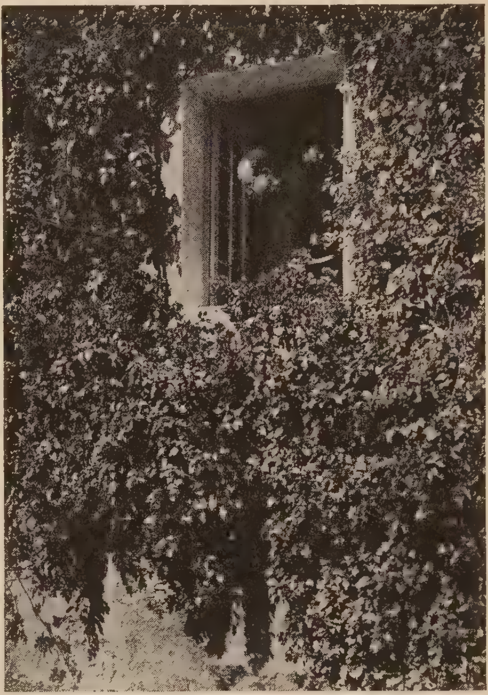


What an air of sad reminiscence there is about this picture of the crumbling remains of a chapel of one of California's missions—that at San Juan Capistrano. As we look at it we think how all the good padres who were doing their noble work when this chapel was first built, have gone, and how many of their mission churches are crumbling back to earth. But their work still lives. Go into any Indian village in the region where these missions were established and you will see on the wall a cross, crudely fashioned of wood or woven of grass. You will also find this emblem of their faith on the high hills and at crossroads, planted in little heaps of stone; "water-stained and sun-cracked," says Dr. van Dyke, "but still the sign before which the Mexican peon and the Indian bow their heads and whisper words of prayer."

and civilizing the Indian tribes of the California coast. The Franciscans were not cloistered monks but working, teaching Brothers. They were skilled in engineering, building, agriculture, stock raising, and all the handicrafts, and were wonderful in organization and government. They knew how to select the most fertile land and to construct irrigation works to water it, and how to make their churches and monasteries social, industrial, and political centers.

Up and down the coast Fra Junipero journeyed, sometimes in boats, sometimes afoot, wearing a path with his sandaled feet that became a trail and then a wagon road. At last he reached the Bay of Monterey and built the mission of San Carlos. The founding of a mission at this point had been the subject of prayer in Mexico City for two centuries, ever since Francis Drake, the English explorer, touched the California coast. When news of Fra Junipero's arrival there reached Mexico City, the bells of the cathedral were rung as for a festival, and high mass was celebrated.

A Priest at the Window

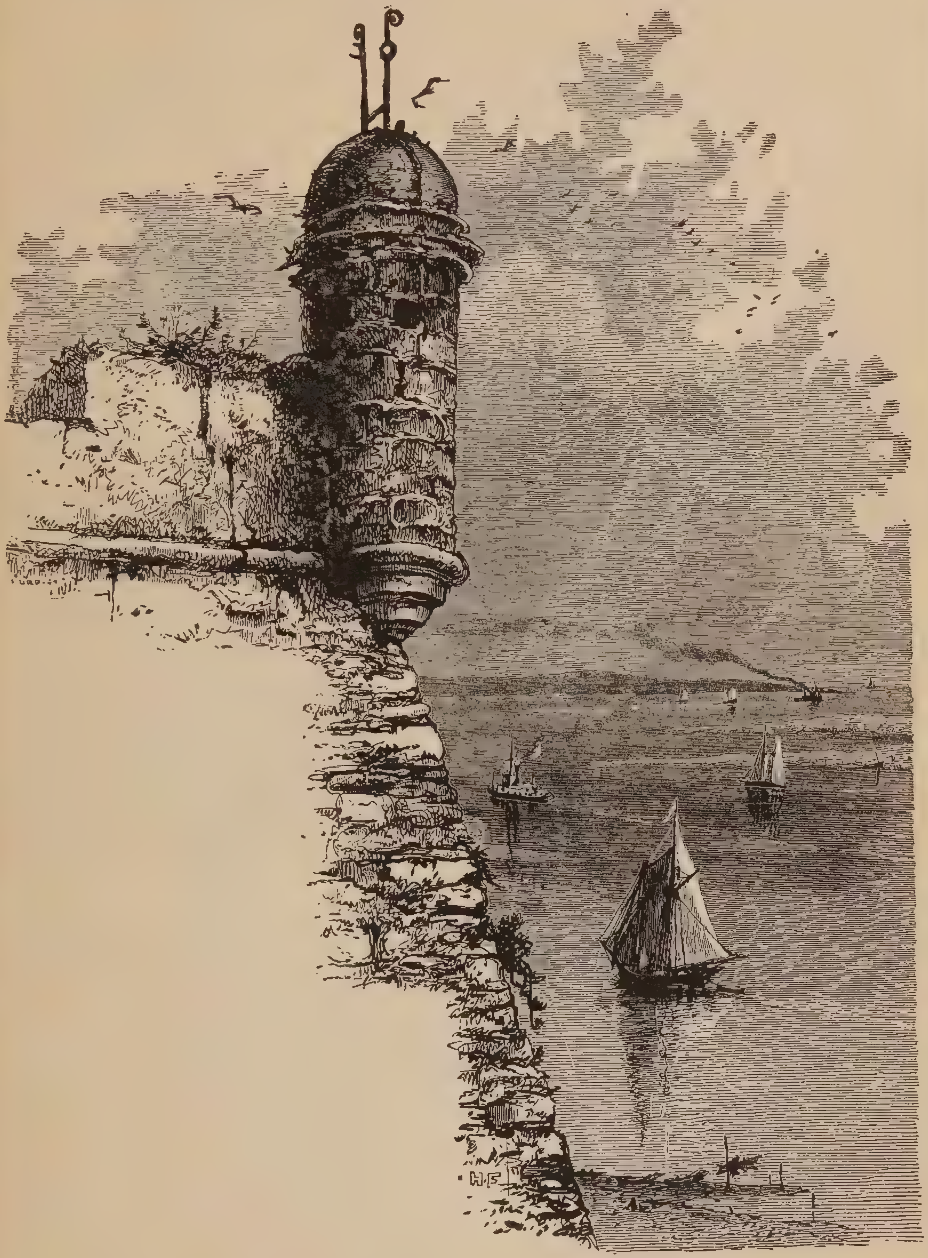


Here we see a priest at the window of what is called his "cell," the small, simply-furnished room in which he lives. How picturesque is the whole effect; the scholarly face of the priest, the thick, clustering vines about the window, the sunlight and the clear-cut shadows of the warm, bright land of Southern California.

In the meantime the saintly missionary was living in a shelter of branches on the beach, where he had set up a cross, and hung a small bell to call his sailors and curious Indians to matins and vespers. There is a beautiful church at Monterey today that is often pointed out as the one he built. It has a setting of great beauty among the hills and woods with the stretch of sandy beach along the bay and the town nestling in the lower folds of pine-clad hills. And in this Presidio Church are many relics and memorials of Fra Junipero's missionary labors. But they were probably recovered from the older mission of San Carlos.

This is still standing six miles from the town, to be reached by automobile or on horseback, over the rough hills. Think now, of that frail priest, for he was always lame, and often ill from the pain of an ulcered leg, tramping in sandals and long gray gown, over those hills when they were covered with tangled forests. He found a site for his church in lovely Carmello Valley, and set his sailors and Indian

One of the Towers of Old San Marco



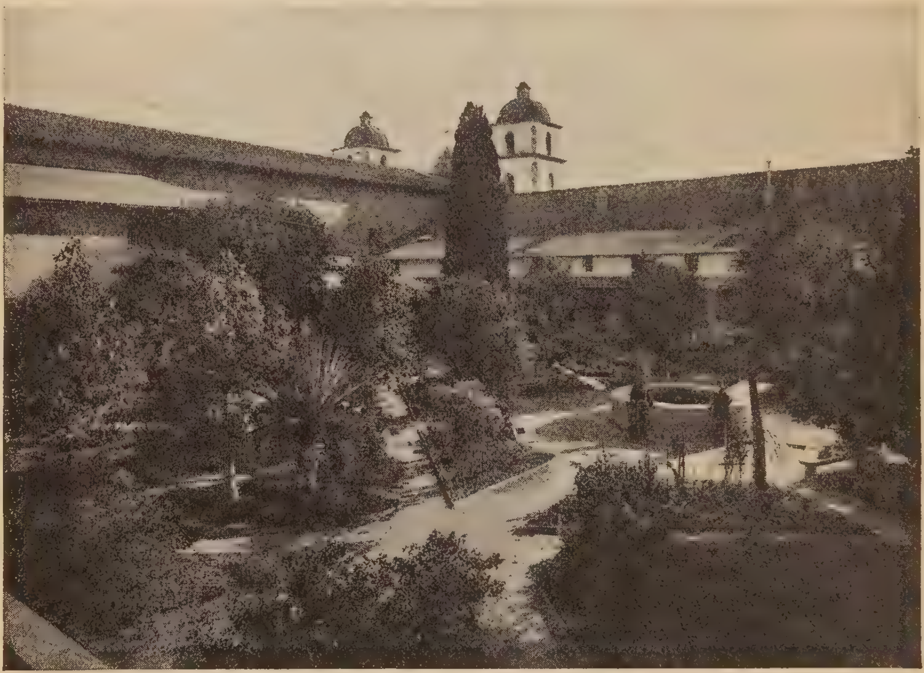
This picture shows one of the towers of the fortress of St. Mark or San Marco as it looked before the stronghold was taken possession of by Uncle Sam and converted into Fort Marion. How picturesque this corner of the old castle looks with the weeds and lichens growing in the crannies of its walls and along its parapet! From this tower the sentinels kept watch and undertook to announce the approach of unwelcome guests, so that shot could be heated for their reception, as explained under the illustration showing other portions of the fort.

converts to work felling trees. It was only a simple log church and monastery that he built at first, roofed with thatch and enclosed in a stockade. But he set up a huge timber cross and hung bells from a framework bedded in stones. Within ten years Monterey was a large and prosperous town and the capital of California. The twenty-one missions were established before Fra Junipero died, in 1784, and was buried under the floor of his little wooden church of San Carlos. The monumental task was finished in the short space of fifteen years.

After his death a new church of a yellow stone almost as soft as adobe, was built over his grave, and roofed with tiles. But population fell away from Carmello Valley and drifted to Monterey. In 1845 the old mission was abandoned. The roof fell in, and weeds and grass grew from every crevice. Then, in 1868, the work of restoration was begun, and today the mission church of San Carlos is the tomb and monument of California's saintly apostle. Enough people have been found among the hills to form a small congregation, and priests take turns in coming over from the Presidio Church of Monterey to hold occasional services.

On Monterey Point, where Fra Junipero first landed, Mrs. Leland Stanford has set up a white marble

Court of Santa Barbara Mission



This picture shows you the beautiful patio or inner court of the mission at Santa Barbara. The fountain at which the two brothers are standing was not playing when the picture was taken. Looking at the scene, we can with the help of the text form a very vivid picture of what life in one of these missions is like: "They are built as hollow squares. All the rooms open on the patio or inner court with its garden and fountain. And each has its cells for the brothers, its guest rooms, workshops, storerooms, and school rooms."

statue of him, in the act of disembarking, one hand upraised, the other clasping his Bible. He greets every visitor who runs down from San Francisco to see the Bay, far famed for its beauty, and the town whose foundations he laid by setting up an altar on the beach. In the same way he appeared at every mission along the coast.

Except Pere Marquette, no other early missionary in the wilds of America presents himself to the imagination as such a heroic, devoted and appealing figure as Fra Junipero Serra. The Spanish Franciscan was, besides, a man of vision, and an organizer like La Salle. His life goes far to redeem Spain's long record of cruelty and greed.

Father Junipero's Monument at Monterey

On Monterey Point, where Father Junipero first landed, Mrs. Leland Stanford has set up a white marble statue of him in the act of disembarking, one hand upraised, the other clasping his Bible. The inscription on the marble block reads as follows:

"Here June 3, 1770, landed very Rev. Father Junipero Serra, O. S. F., and founded the following Missions: San Diego, July 16, 1769; San Carlos, Monterey, June 3, 1770; San Luis Obispo, Sept. 1, 1772; San Francisco de Los Dolores, Oct. 9, 1776; San Juan Capistrano, Nov. 1, 1776; Santa Clara, Jan. 18, 1777; San Buenaventura, Mar. 31, 1782. He died Aug. 28, 1784, in San Carlos Mission, Carmello Valley. 'As the Lord liveth, even what my God saith, that will I speak.'

"This monument erected by Jane L. Stanford in the year 1891, in memory of Father Junipero Serra, a philanthropist seeking the welfare of the humblest, a hero, daring and ready to sacrifice himself for the good of his fellow beings, a faithful servant of his Master."

Jacques Cartier

In the seaport of St. Malo, 'twas a smiling morn in May,
When the Commodore Jacques Cartier to the westward sailed away;
In the crowded old Cathedral all the town were on their knees,
For the safe return of kinsman from the undiscovered seas;
And every blast that swept o'er pinnacle and pier,
Filled manly hearts with sorrows, and gentle hearts with fear.

A year passed o'er St. Malo—again came round the day
When the Commodore Jacques Cartier to the westward sailed away;
But no tidings from the absent had come the way they went,
And tearful were the vigils that many a maiden spent;
And manly hearts were filled with gloom, and gentle hearts with fear.
When no tidings came from Cartier at the closing of the year.

But the earth is as the future, it hath its hidden side,
And the Captain of St. Malo was rejoicing in his pride;
In the forests of the North—while his townsmen mourned his loss—
He was wearing on Mount Royal the fleur-de-lis and cross;
And when two months were over, and added to the year,
St. Malo hailed him home again, cheer answering to cheer.

He told them of a region, hard, iron-bound, and cold,
Nor seas of pearl abounded, nor mines of shining gold;
Where the wind from Thulé freezes the word upon the lip,
And the ice in Spring comes sailing athwart the early ship;
He told them of the frozen scene, until they thrilled with fear,
And piled fresh fuel on the hearth to make them better cheer.

But when he chang'd the strain—he told how soon are cast,
In early Spring, the fetters that hold the waters fast;
How the wintry causeway, broken, is drifted out to sea,
And the rills and rivers sing with pride the anthem of the free;
How the magic wand of Summer clad the landscape to his eyes,
Like the dry bones of the just when they wake in Paradise.

He told them of the Algonquin braves—the hunters of the wild;
Of how the Indian mother in the forest rocks her child;
Of how, poor souls! they fancy in every living thing
A spirit good or evil, that claims their worshipping;
Of how they brought their sick and maim'd for him to breath upon;
And of the wonders wrought for them, thro' the Gospel of St. John.

He told them of the river whose mighty current gave
Its freshness for a hundred leagues to Ocean's briny wave;
He told them of the glorious scene presented to his sight,
What time he reared the cross and crown on Hochelaga's height;
And of the fortress cliff that keeps of Canada the key;
And they welcomed back Jacques Cartier from his perils o'er the sea.

THOMAS D'ARCY MCGEE

The Children and Their "Great Republic"

THE most fortunate children in the world are the boys and girls who live in America. This is partly, but not chiefly, because ours is a land of plenty, with rich valleys and broad prairies which "when tickled with a hoe, laugh with a harvest."

A stalwart immigrant on the dock at New York gathered in his arms four lads, his sons, just landed, whom he had left in Europe because he had no money to bring them with him. Now, after years of work and thrift, he had prepared a home and had sent for them. Leading them up from the dock, he halted, and pointing at the flag floating above them he said: "My sons salute your flag; this is your country, the land of the free," and with bared heads, father and sons saluted the Stars and Stripes.

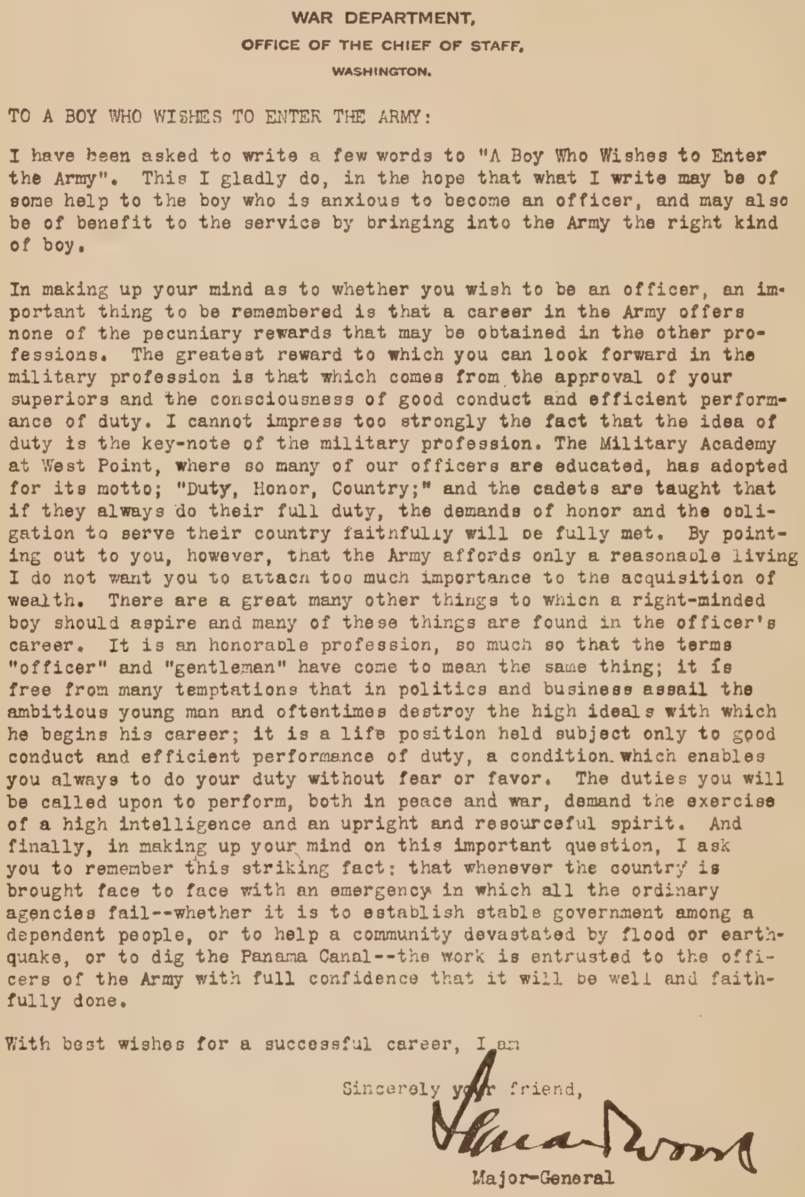
Like them many millions of men, women, boys and girls, through the long years, have come from across the sea to free America. If at first they came to better their condition, they have lived here to learn that America is prosperous because she is free.

The charter of our freedom is found in our national constitution, the fundamental law of the land. You need to know what this constitution is, how under its provisions all citizens are free and equal before the law, equal in opportunity to secure education and personal advancement and to reap the reward of individual endeavor. You need to understand your responsibility as a citizen, for with your vote you help to elect the men who make and who administer our laws. You need to appreciate the fact that it is your government, that you are a part of it; that as a citizen you have a sacred trust, of which you should be proud.

You should also know how our nation has moved forward, how its mighty resources have been both conserved and developed. This splendid story you will find written in this book. You will read of how in the development of mines, the improvement of agriculture, the irrigation of arid plains, in free schools, and in a thousand ways, your government like a wise father, has nourished and promoted the welfare of its people. You should stand by it, and you should note thoughtfully that if there are defects in our laws, the remedy is in the hands of the people, and there is never an excuse to seek change by violence.

Chandler B Beach

The Soldier and His Country



WAR DEPARTMENT,
OFFICE OF THE CHIEF OF STAFF,
WASHINGTON.

TO A BOY WHO WISHES TO ENTER THE ARMY:

I have been asked to write a few words to "A Boy Who Wishes to Enter the Army". This I gladly do, in the hope that what I write may be of some help to the boy who is anxious to become an officer, and may also be of benefit to the service by bringing into the Army the right kind of boy.

In making up your mind as to whether you wish to be an officer, an important thing to be remembered is that a career in the Army offers none of the pecuniary rewards that may be obtained in the other professions. The greatest reward to which you can look forward in the military profession is that which comes from the approval of your superiors and the consciousness of good conduct and efficient performance of duty. I cannot impress too strongly the fact that the idea of duty is the key-note of the military profession. The Military Academy at West Point, where so many of our officers are educated, has adopted for its motto; "Duty, Honor, Country;" and the cadets are taught that if they always do their full duty, the demands of honor and the obligation to serve their country faithfully will be fully met. By pointing out to you, however, that the Army affords only a reasonable living I do not want you to attach too much importance to the acquisition of wealth. There are a great many other things to which a right-minded boy should aspire and many of these things are found in the officer's career. It is an honorable profession, so much so that the terms "officer" and "gentleman" have come to mean the same thing; it is free from many temptations that in politics and business assail the ambitious young man and oftentimes destroy the high ideals with which he begins his career; it is a life position held subject only to good conduct and efficient performance of duty, a condition which enables you always to do your duty without fear or favor. The duties you will be called upon to perform, both in peace and war, demand the exercise of a high intelligence and an upright and resourceful spirit. And finally, in making up your mind on this important question, I ask you to remember this striking fact: that whenever the country is brought face to face with an emergency in which all the ordinary agencies fail--whether it is to establish stable government among a dependent people, or to help a community devastated by flood or earthquake, or to dig the Panama Canal--the work is entrusted to the officers of the Army with full confidence that it will be well and faithfully done.

With best wishes for a successful career, I am

Sincerely your friend,

Leonard Wood

Major-General

The Army and the World War

Studying the War Map
These two officers are studying war maps during a campaign.

CHILDREN who were old enough to be in the primary grades in school in 1917 will always remember the great war which the United States fought with England, France and their allies, against Germany and her allies. Presently we will tell you just what the little tots and older boys and girls did to help win that war. But first we must tell you what it was all about, and why our country took no part in it until other countries had been fighting for nearly three years.

Really to understand it you should know how differently from other great nations the people of the United States have always felt about war; and why we had no big, standing army and military supplies in readiness. When George Washington was living we fought the Revolutionary War to win our liberty. In the next hundred years we fought four more wars. They were all on American soil, and to right some wrongs, or to protect our own country from danger. We had no big, quarrelsome neighbors to bring trouble upon us; and because we were so far away, across three thousand miles of ocean, and they were always busy fighting each other, the great nations of the Old World let us alone. Besides, as we had won all our wars with volunteer soldiers, we thought that we could always raise a large army quickly, if we had to defend ourselves.

Why Our Army Was Small

We got that idea in colonial and pioneer days when most American men needed very little train-

Beginning a Pontoon Bridge

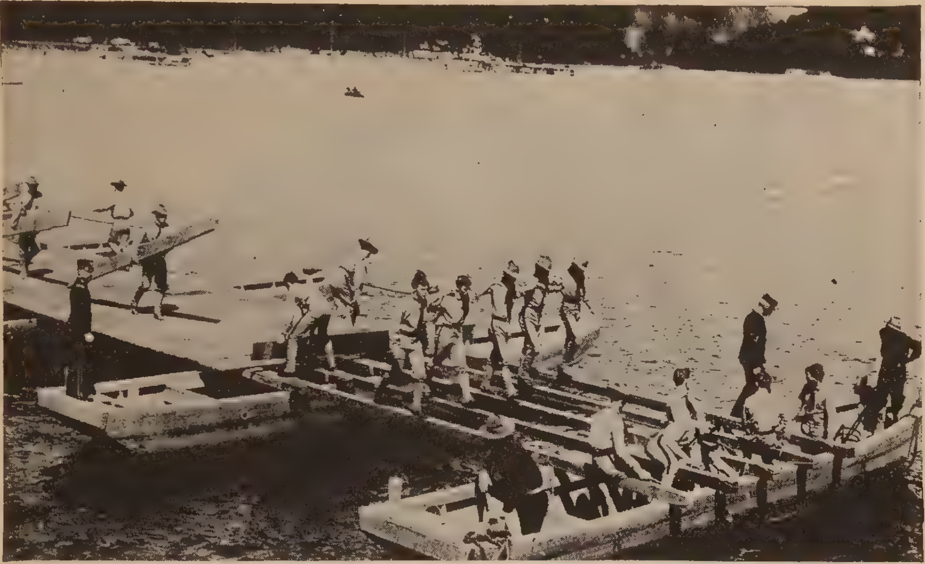
It is important that soldiers should know how to build bridges. Pontoon bridges are hurry-up affairs and have been used by armies ever since Xerxes crossed the Hellespont on one, and probably before. In the picture the New York National Guard is building one.

ing to make good soldiers. Men who had fought Indians, hunted wild game, and chopped down forest trees to build cabins, were brave, hardy, and resourceful. They could shoot straight, make long marches, and stand all sorts of hardships. Then war was a simple matter when a block-house made a good fort, and soldiers fought with hand weapons. The older, experienced men were good leaders in the rough-and-tumble fights at Lexington and Bunker Hill. But there were so many things they did not know about drilling and commanding men, keeping them in good health, and winning big battles, that General Washington opened an officers' training school at West Point, on the Hudson River, in 1778.

There the new United States built one of the finest military academies in the world, for officers were needed for a small regular army of 50,000 men, whose chief duty was to keep the Indians in order. As a home guard, which the President could call upon to defend our country from attack, the states kept up the system of a partially trained militia of the old colonies. Before the War of 1812, we had a good, small navy, too, and an academy for training naval officers at Annapolis, Maryland.

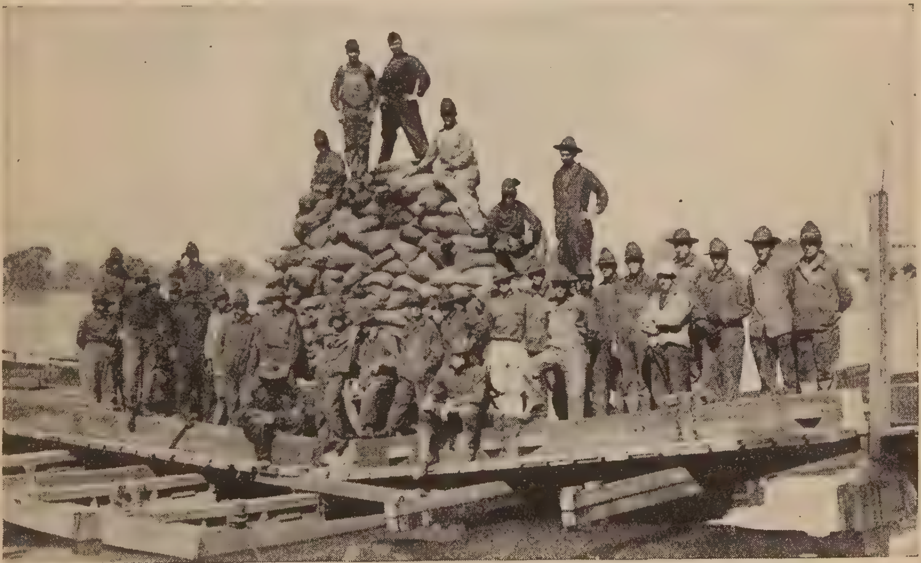
Now the country grew and spread westward, and filled up with people very fast. By the time of the Civil War, in Lincoln's day, many of our soldiers came from shops, offices, and factories of cities and towns. Although they had never handled a gun, or slept out of doors in their lives, they made the best and bravest of soldiers. But we know now that if they had been properly trained and supplied in the beginning, the war could have been won sooner and with less loss of life.

Almost Finished



Long timbers are fastened to floating supports or pontoons and covered with crosspieces that make a level board walk. Pontoon bridges are usually built as quickly as possible and are not expected to be permanent. Notice how the long timbers are fastened together.

A Bridge That Will Carry Big Guns



The upper bridge is made to furnish a safe highway across water for marching men, but this bridge has still greater burdens to bear. As you can see, it is also a pontoon bridge but it is built strong enough to sustain the weight of heavy guns. What do you suppose the sacks are for? They are filled with sand and have been piled on the bridge as a test. The combined weight of the sacks and all the men shows that this bridge will safely carry artillery whose weight amounts to fifteen tons upon each axle.

Over the Ramparts

The soldiers are storming and taking mock fortifications in a sham battle given before a big audience.

After the short war with Spain in 1898, we doubled our regular army and began to build up a large, modern navy. With the Philippine Islands and the Panama Canal Zone to govern and guard, and Cuba to help become a peaceful little republic, we had become a world power. We had more police duty, some of it far from home; we could no longer say that nothing outside of America concerned us, or be sure that we could continue to avoid trouble. Many people, among them President Roosevelt, thought that if we should ever have a war with a big foreign power, our country might be invaded before we could get ready to defend ourselves, and that we should be better prepared.

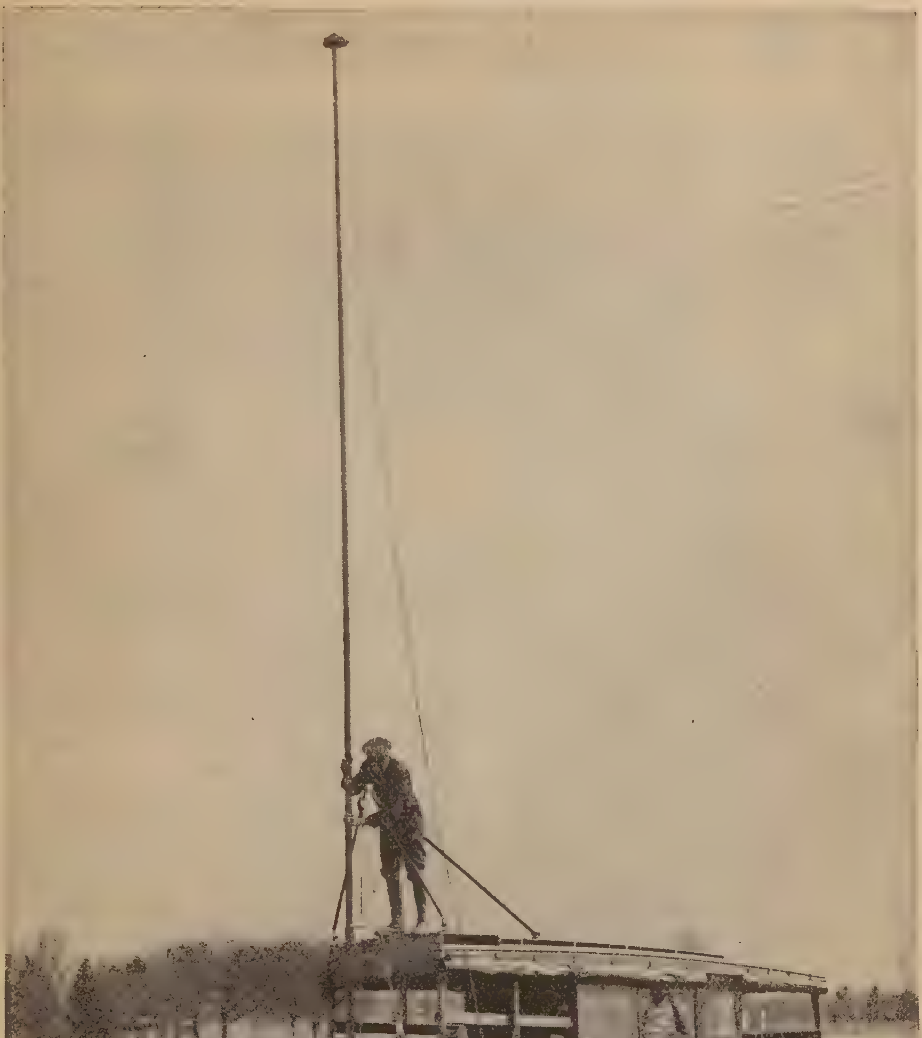
You see, the Atlantic ocean was no longer the protection that it had been in early days. In 1620 it took the Pilgrims ten weeks to cross it, in a small sailing vessel that carried only one hundred passengers and their goods. Now, huge ocean steamers that carry thousands of people and thousands of tons of freight, cross that ocean in five or six days. And fast railroad trains rush across continents. That makes Europe and America near neighbors.

Since travel and trade became so easy, the small crowded lands of the Old World stopped trying to grow all their food. By making goods in factories, to sell in far-away lands, they could buy bread-stuffs, meat, sugar, leather, oil, rubber, cotton, wool, and other things they needed. Many years ago it was known that if trade with western Europe was stopped, millions of people would be starved.

The New Method of Warfare

When Germany and Austria suddenly began a war of conquest against France, Russia, and Serbia

A Portable Telegraph Station



An army not only carries its telephone lines along with it nowadays, but its telegraph, too. The picture shows a wireless aerial mounted on a motor truck. By means of this the officers in charge can communicate with each other, the President at Washington and even ships at sea.

A Field Telephone

When the army is in action, wires are strung up connecting the commander with all parts of the battlefield. This is "central"—a soldier with a portable switchboard somewhere behind the battle front—connecting one of the commanding officers with a distant division of his force.

in 1914, it was the duty of the United States to be neutral—that is, friendly to both sides—and keep trade open on the sea.

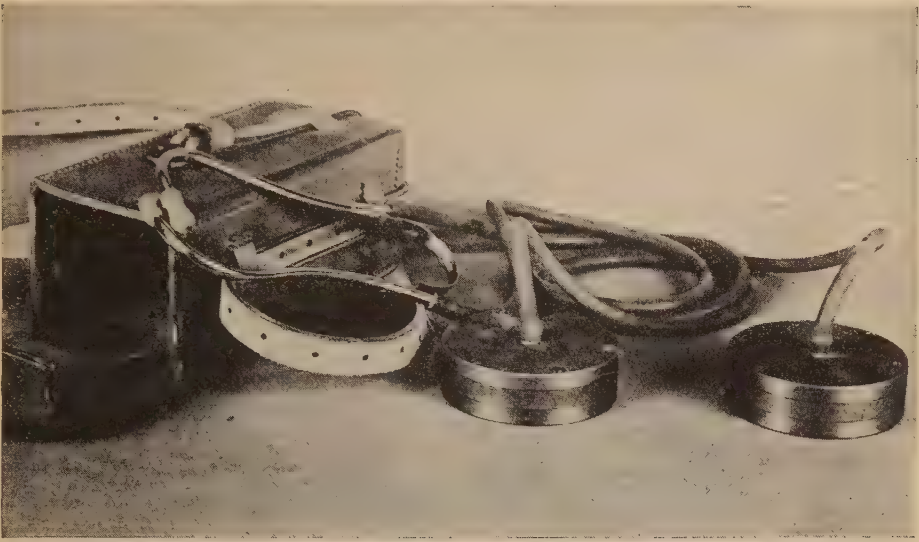
Then we saw what a swift, terrible thing war had become. There were no more long, slow marches. Millions of highly trained soldiers were rushed to the battle front in railway trains. Freight cars and motor trucks had taken the place of horse-drawn baggage wagons and gun carriages. Airships and balloons were used for scouting. Messages were carried, not by Paul Reveres, on horseback, but by wireless telegraph, telephone wires, wireless telephone, and by motorcyclists.

The Soldiers and the War by Machinery

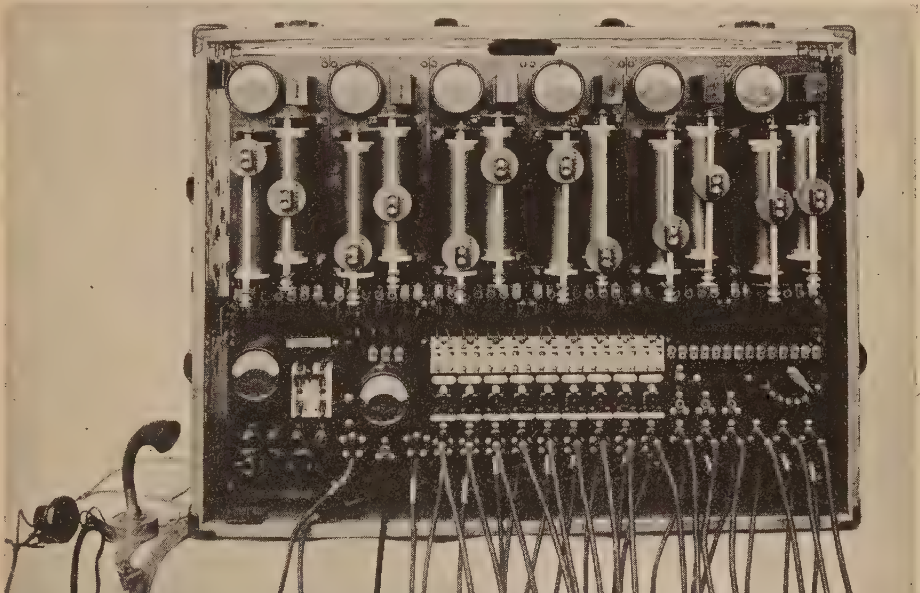
Soldiers, too, had to have a different sort of skill and bravery. They still had to be able to shoot, and use bayonets, but they had also to be machinists, electricians, and engineers. They had to learn how to throw hand grenades, and how to live and keep in health in the foul mud of deep trenches. When they went "over the top" in attacks, they had to face the fire of self-feeding machine guns that spattered hail storms of bullets. They had to cut their way through electric, barbed-wire entanglements, and charge across fields planted with explosive mines. Since airplanes dropped bombs from the sky on trenches, marching columns and supply trains, they had to learn a new art of concealing roads, gun positions and defense lines. This was called by the French word "camouflage." They had to learn to mount and manage anti-aircraft guns, to shoot the bird-like airplanes on the wing.

Germany and her allies, Austria,

Talk About Sharp Ears!

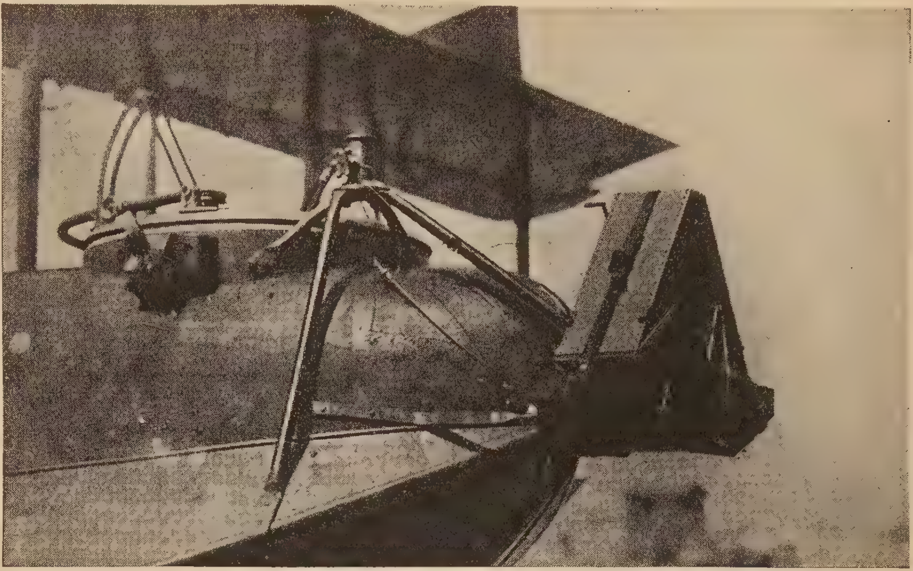


Even "little pitchers with big ears"—you know that's what they call small people who seem to hear everything that is going on around them—are not to be compared with the mechanical



listeners you see in these two pictures. The upper one is for listening to the enemy digging under ground and trying to lay mines to blow you up. By this device and others like it located at different points, skilled men are able to calculate the location of hidden guns by the difference of the length of time it takes the sound of the firing to reach these listening places. The hiding place of one of the "Big Berthas" that fired on Paris, seventy-five miles away, was so discovered.

Three Snap Shots in One



In warfare it is often quite important to take pictures from an aeroplane. Such pictures show the position of enemy defences, the disposal of bodies of men and give other information which it is very desirable to have. This picture shows one of the cameras used for this kind of work. It is called the Bagley Camera and its merit is that exposures made at intervals produce a continuous photograph.

Turkey, and Bulgaria, not only had the largest and best-trained armies, and vast stores of military supplies to fight with, but they broke all the rules of warfare which civilized nations had agreed to keep. To reach France quickly, Germany marched across Belgium, a small neutral country, and because the plucky and honorable Belgians delayed her, and defended their neutrality, German armies burned and looted her cities, churches, and farms. Hundreds of thousands of ruined people were driven from their homes, into Holland, France, and England. Thousands of others were killed, robbed, and enslaved. And when Belgium was shut away from trade, a little nation of seven million peaceable, hard-working people began to starve.

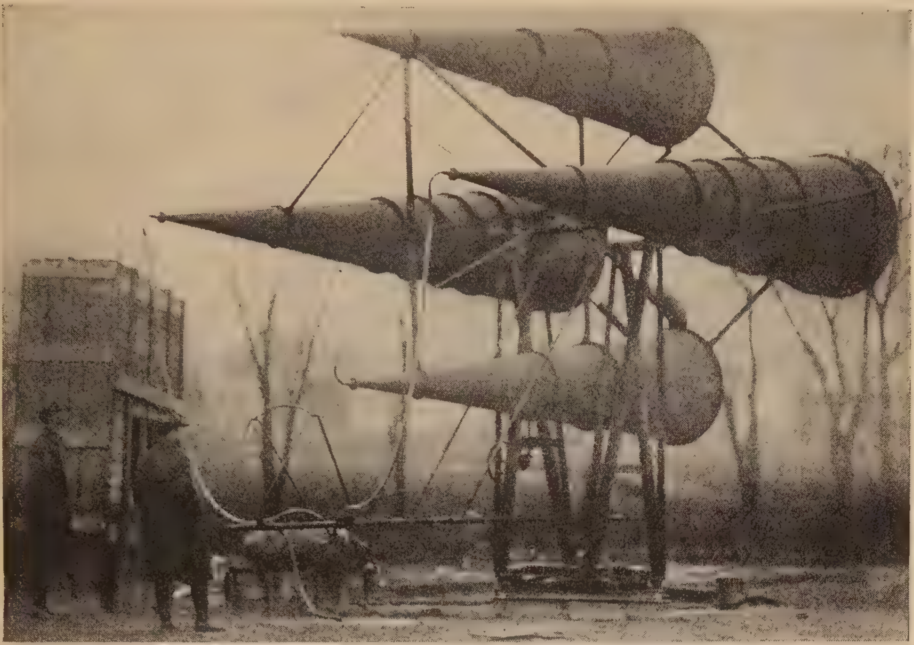
The first thing the children of America were asked to do was to give their pennies to the Belgian Relief Fund. The United States and other neutral countries forced Germany to allow them to send food ships to keep the people of Belgium and northern France alive.

How England Came into the War

Not only did Germany invade Belgium without any other excuse than the fact that she could thus strike France to better advantage but, together with England and the other great powers of Europe, she was one of the signers of a treaty that guaranteed Belgium's independence. England was one of the guarantors of this treaty. Moreover, the defense of Belgium was an immemorial part of this policy. Germany knew this, but counted on England's internal difficulties to keep her out of the conflict.

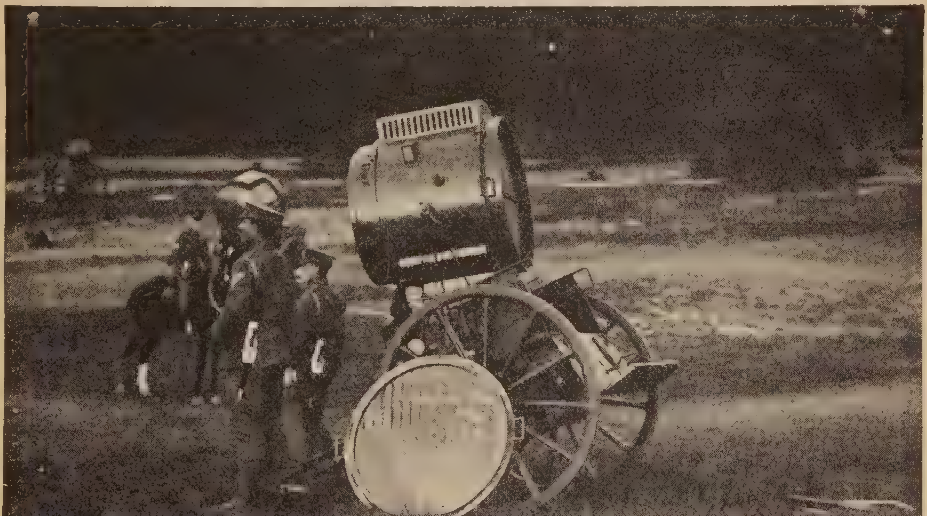
So England declared war, hurried an army to France, and sent her

And These Are Ear Trumpets!



If you have ever heard a flying-machine you know it is like a big blue-bottle fly—it can't get on without making a lot of noise. But the great ear trumpets in this picture can not only "hear" the buzz of the aeroplane much farther than can the human ear, but by use of them the flying machines can be located. Then the gunners open up on these unwelcome visitors with the nearest anti-aircraft guns and some of your own airmen go up after them.

A Searchlight on Wheels

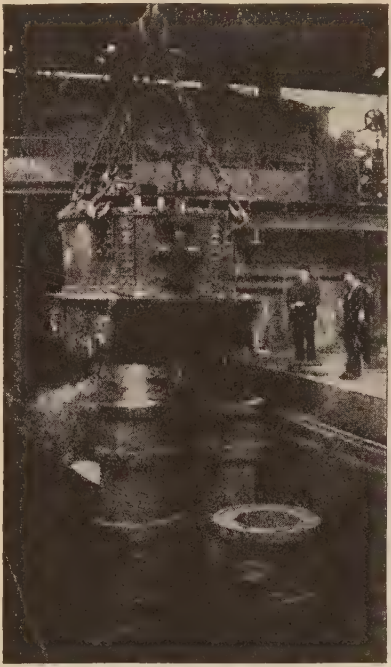


This is one of the searchlights used for throwing great beams into places which the enemy would like to keep dark, and finding out things the enemy doesn't want you to know. This particular type is very light, can be easily moved, is comparatively inexpensive, and throws a beam of large diameter a very great distance.

grand fleet of warships to cut off Germany's overseas trade. That was fair, between enemies, in war. Besides, Germany could manage to feed her own people. But it did prevent her getting cotton, rubber goods, war materials, and abundant foods from the United States, and so put her at a disadvantage.

In revenge for this blockade Germany did many forbidden and barbarous things. Her fleets of airships dropped bombs on London, Paris, and other open cities, killing women and children. She bombed hospitals, killing doctors, Red Cross nurses, and wounded soldiers. She mounted enormous cannon, far behind her own battle lines, and dropped explosive shells on cities twenty, thirty, and then seventy-five miles away. In this way she destroyed towns, and beautiful old cathedrals that she could not capture. Then, to the horror of the world, Germany used clouds of poison gas, sending them on the winds to the trenches. Thus thousands of brave soldiers were killed with no chance to defend themselves. And at sea, Germany sank merchant ships with torpedoes fired from submarines. It would have been fair to sink the ships of her enemies, after allowing passengers and crews time to take to the lifeboats and even to capture and take war materials on other ships that supplied enemy countries, if she could. But Germany sank the ships of all nations, of those that were neutral, and even friendly to her, and often without warning. In six months she sank three hundred ships, with a loss of two thousand lives. One was the American steamer "Gulflight."

The Beginning of a Big Gun



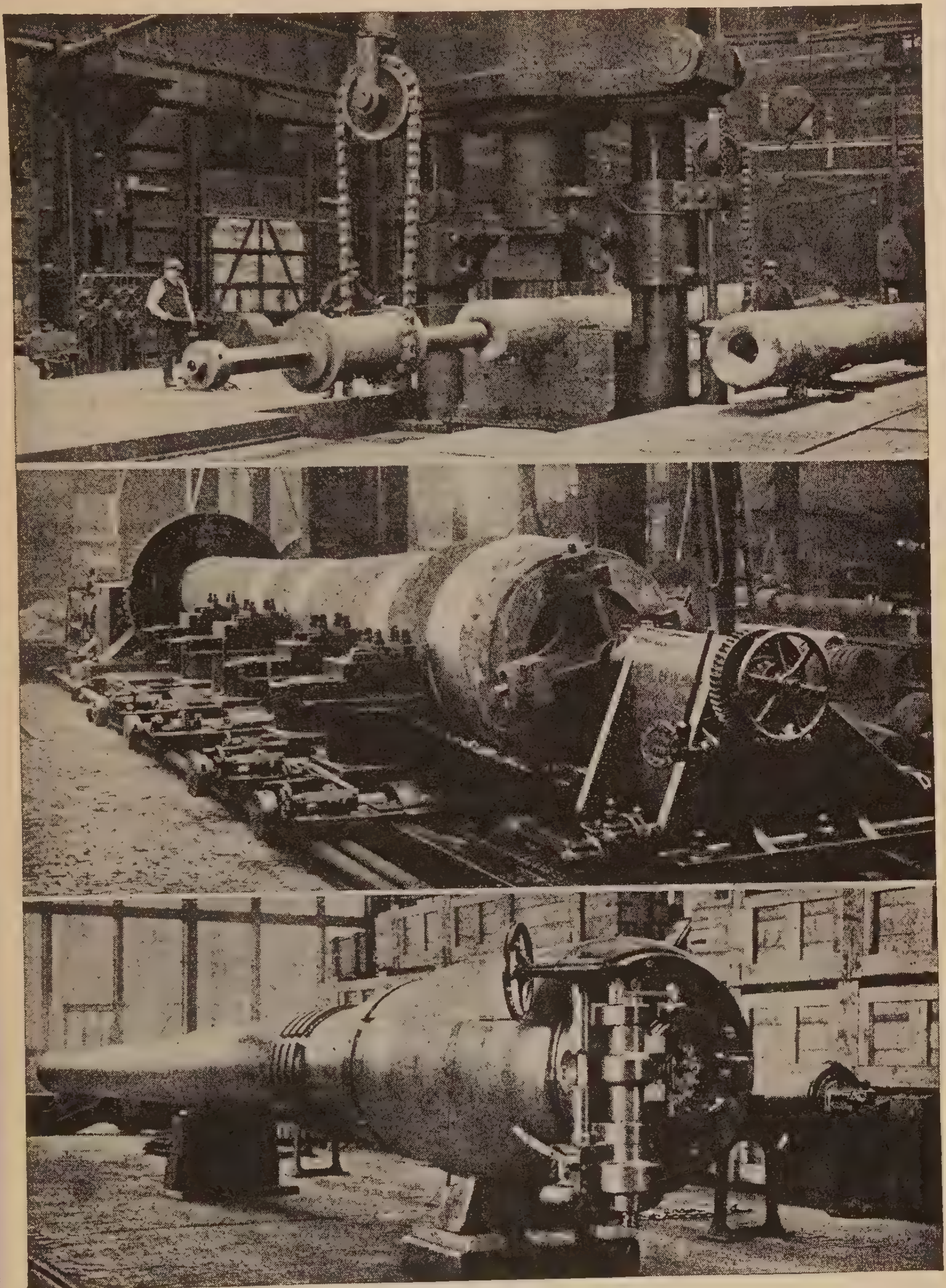
The barrel of a cannon begins as a solid steel ingot, and is trimmed, hammered and pared into a tube by huge cutting instruments. The steel of which the barrel is composed must be very pure and very strong. The picture shows the molten steel being poured from the caldron into the molds which shape it into ingots.

How We Were Forced Into the War

In May of 1915 the British ocean liner, the *Lusitania,* was torpedoed without warning. More than one thousand people, many of them women and children, were drowned. One hundred and two were American citizens.

In spite of this unheard of outrage—without precedent in modern warfare—the United States still hoped to remain neutral; to be the one great nation not involved and thus, among other things, to help in bringing about peace. She could not, however, tolerate these lawless attacks upon the lives of her citizens and demanded that Germany enter into an agreement to stop such acts of piracy and make the usual pro-

Three Stages in the Growth of a Big Gun

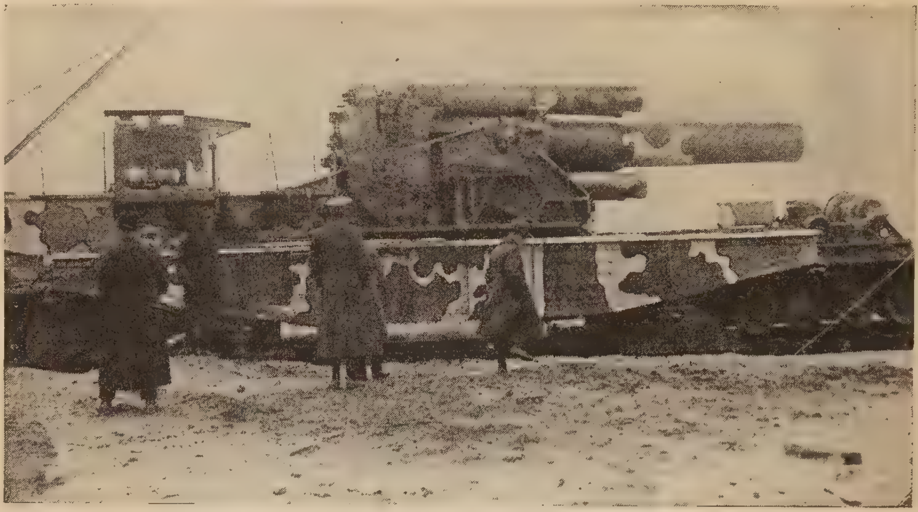


The upper picture shows the steel ingots, heated white hot and being worked upon by a hydraulic press, which shapes them roughly.

Next the big gun is turned and worked by eight cutting tools at once.

Last of all, the finished gun is sent to the examination shop, where it must pass severe tests before being declared fit for service.

A Fine Piece of "Camouflage"



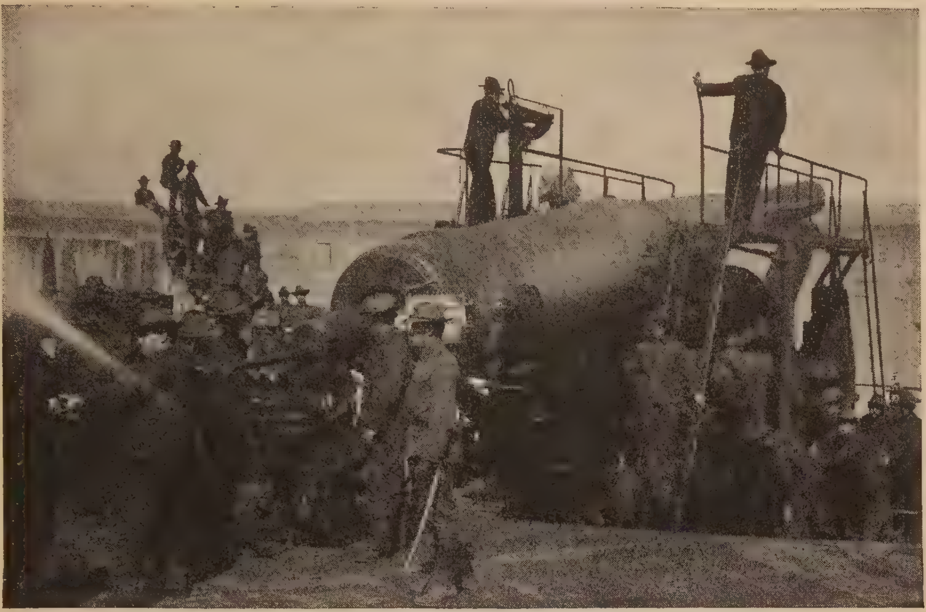
Just compare the very artistic "camouflage" on this big gun with that on the dummy gun on page 1773. If you had never heard about "camouflage," and should see the two pictures, you would see that the artist—whatever he might have been up to—had taken a great deal more pains in this case than the other, wouldn't you? Don't you suppose it was because he wanted the dummy gun to be seen? You notice the bed of the car is "camouflaged" too. Such monster guns are for quick movement from place to place and so are mounted on cars, and these cars like the guns themselves are spotted in that irregular way so that they will not be so easily seen when moving across country with its various differences of surface and lights and shadows. And in passing through a wooded country you can see how these painted shadows on the gun and the car would mingle with the mottled shadows of the trees.

vision for the safety of the passengers and crew. Germany solemnly, and in due form, agreed to this, and so for a time we kept out of the dreadful conflict.

But it seemed inevitable that we should sooner or later be drawn into it. Among other things, it was learned that German spies were in this country plotting mischief and destroying property in order to stop our selling food, clothing and war material to the allies; as, of course, we had a perfect right to do. Moreover, Germany's violation of Belgium's neutrality and the sneering reference of Germany's foreign minister to the treaty guaranteeing the neutrality of Belgium, as "a scrap of paper," although she herself had signed it, made it seem very unlikely that she would hesitate to again break her word, and it was felt that we should prepare for war. Among other things, the military and naval academies were enlarged and twenty-six big new war-ships and many destroyers and submarines were ordered. President Wilson made a speaking tour of the East and Middle West, during which he emphasized the danger that we might be drawn into the war. "Preparedness parades" were held in some of the chief cities of the country with a view to letting the President and Congress know that the people felt the necessity of increasing our means of defense. Twelve hundred business, professional, and public men volunteered to go to the army post at Plattsburg, New York, to begin the training of army officers.

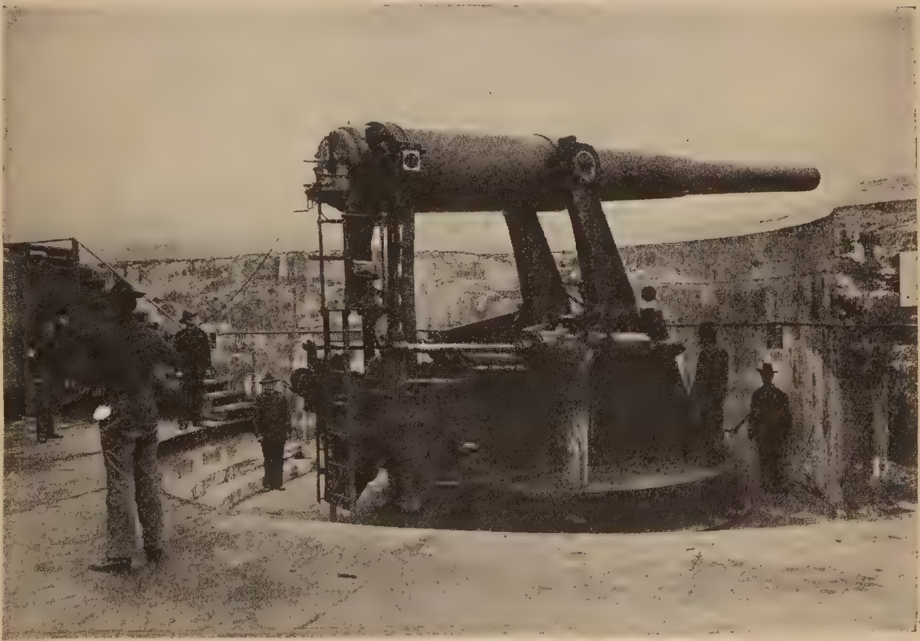
In February of 1917 Germany broke her promise, and began a new

Loading One of the Big Guns



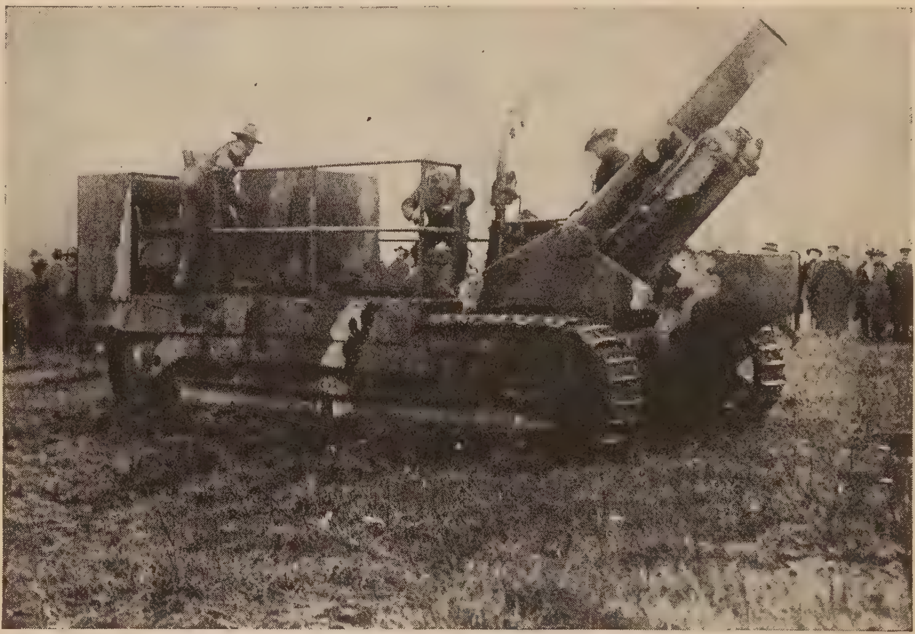
Modern cannons are mounted so that they rest well down behind a parapet or other protection, but they can be raised by machinery and aimed over the wall. The man at the left is pointing the gun at the mark. See how many men are required to do the loading.

All Ready to Fire



This huge gun is part of our coast defense. The picture gives you a good idea of the foundation on which such guns rest—a steel standard riveted into solid masonry.

A Caterpillar Traction Gun



This is one of a number of similar guns that was being built for the American Army when fighting in the World War was suddenly brought to an end by the armistice. It is called a traction gun because it is mounted on wheels and a "caterpillar" traction gun because these wheels have that steel belt with cleats on it, which enables them to climb up and down obstructions like a caterpillar. This gun and its carriage weighed fifty-five thousand pounds.

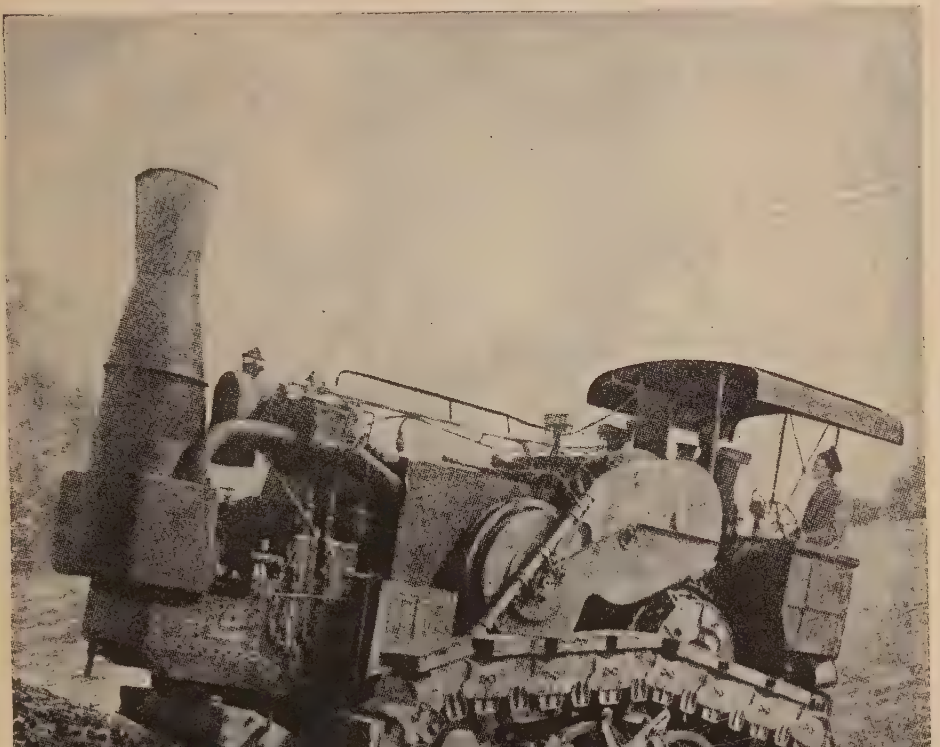
and merciless submarine warfare, sinking even hospital and Belgian Relief food ships. The United States put naval defense guns and gunners on our merchant vessels, but three were sunk in March.

President Wilson accordingly called a special session of Congress on April 2, and in the evening of that day delivered his historic message, asking that war be declared against Germany. Congress supported the course advised by the President, and on April 6 a joint resolution was adopted, formally declaring the existence of a state of war between the United States and Germany.

The navy alone was ready for duty. Our war vessels began to patrol the western Atlantic, for German submarines had crossed the ocean, and sunk ships near our coast. And a fleet of our destroyers and submarines joined the British and French in European waters, to hunt and sink the enemy undersea craft.

But about our army everything had to be done. In June General Pershing went to France in chief command of the troops of the regular army that were in the United States. Volunteers flocked to the National Guard, or states militia, which were "federalized" so they could be sent abroad. Marines and civil and railroad engineers volunteered, too. Some of our soldiers were in the trenches of France in November, some driving ambulances, some in aviation camps learning to fly, and some building training camps, warehouses and railroads from seaports to the battle front.

The Grandfather of the Wonderful Caterpillar Tank



Little did His Majesty, King George of England dream, and little did any of his soldiers dream, when he inspected this queer mechanical monster in May, 1908, that he was looking at a device which, in another form, a few years later would prove one of the greatest weapons in the hands of his soldiers for helping to win the greatest of all wars. The two chief points about the "tank," which came as such a surprise to the Germans and did such frightful execution, were that the gunners were in a steel fort on wheels and that these wheels could cross ravines, go over boulders and rocks and fallen trees—in fact, any ordinary obstruction. It was the belting device over the wheels shown in this picture, that, somewhat modified enabled them to do this. This machine is for carrying guns into action in rough country.

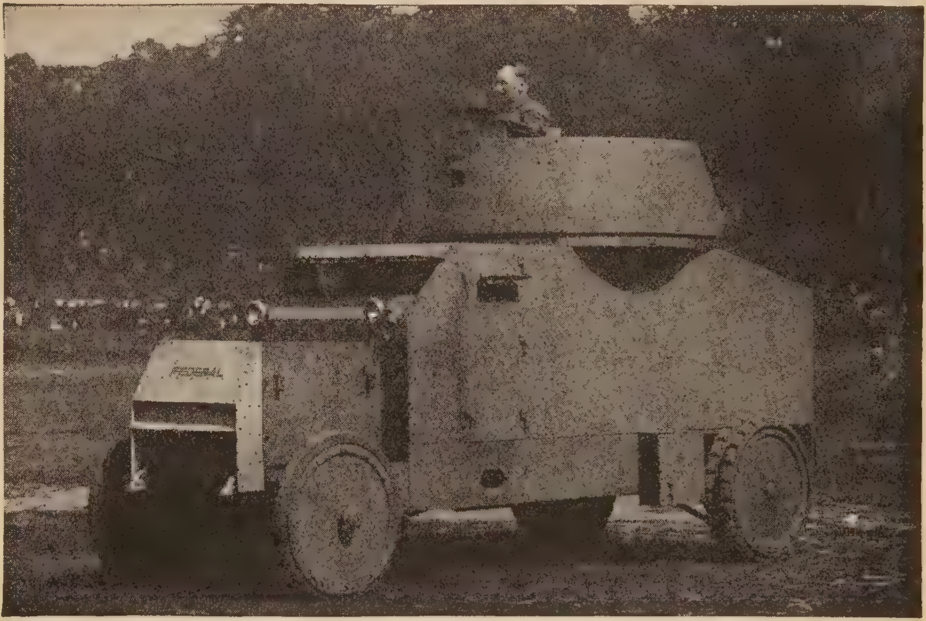
Abandoning the Volunteer System

But that, of course, was only "a drop in the bucket." To get a big army of the best material, quickly, the old volunteer system was dropped. All the young men between 21 and 30 were required to register, and be examined for the "selective draft." Later the ages were lowered to 18 and raised to 45. Nearly seventeen million men were registered, and plans were made for an army of four or five million. Thousands were in training in the sixteen new encampments by September, and by January ships began to carry United States troops to France for further training.

It was not only soldiers that were needed, but rifles, bayonets, machine guns, artillery, grenades, airplanes, "tanks," uniforms, shoes, blankets, gas masks, food, medical and hospital supplies, and ships. We had to turn sewing machine and automobile factories and steel mills into plants for making guns and flying machines. Spruce trees had to be cut in the forests for lumber for flying machines, and castor beans planted for oil for lubricating them. Then ten camps were opened, to train the thousands of officers that would be needed.

Congress had to pass a great many laws in haste, but its biggest task was to raise money to pay the enormous cost of the war. The United States had been spending about one billion—that is, one thousand million—dollars a year for all public expenses. Before January of 1918, Congress had spent twenty-one billion! Part of this was raised by taxes on incomes and other things, and part by the sale of government bonds. Nearly every family in America bought "Liberty Bonds."

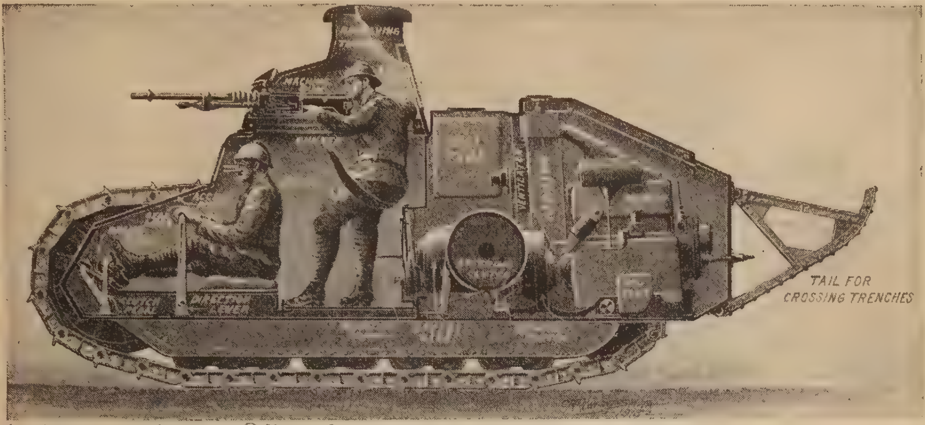
Like a Traveling Fort



© International News Service

Here is an automobile carrying a machine gun. Its sides are armored like a battleship.

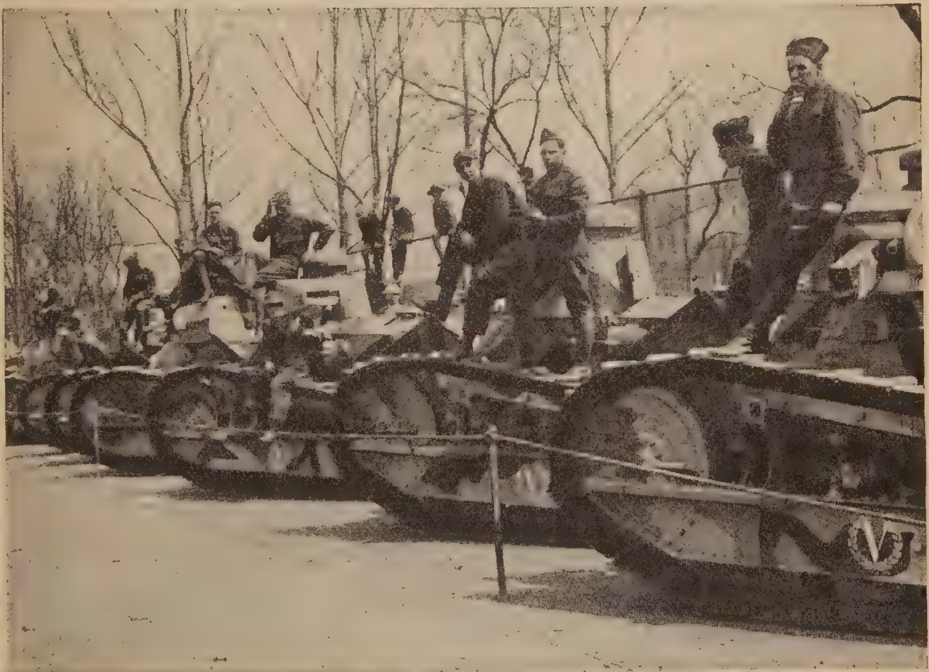
Inside One of the "Tanks"



Courtesy Scientific American. © Munn & Co.

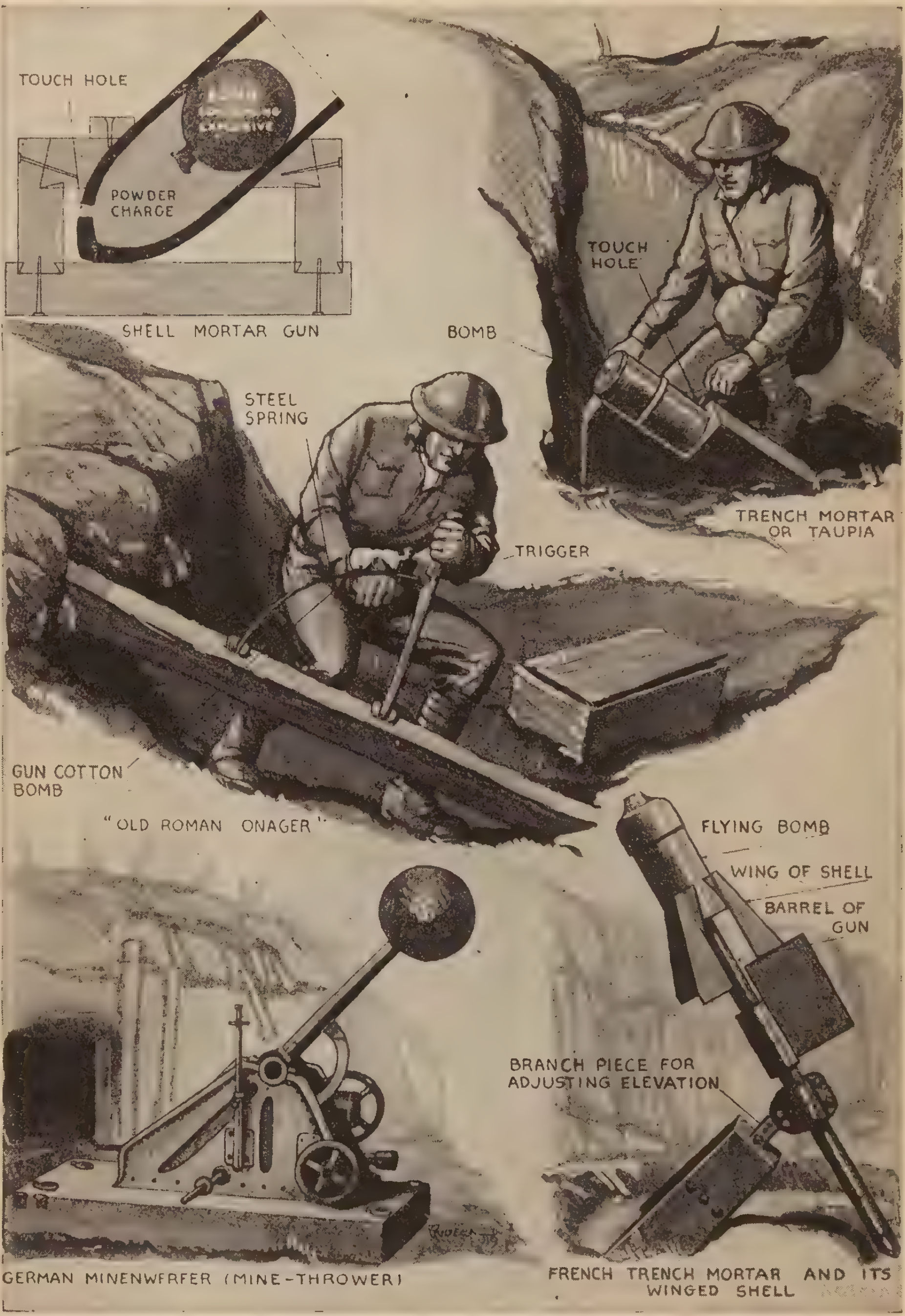
"Tanks," as they were called, were entirely new machines of warfare introduced for the first time by the British in the European War. They proved to be one of the most important things in winning the war for the Allies. This picture shows you the inside of one of them. The gunner sat inside a revolving turret so that he could turn his attention to any point. Sitting in that belt-like device or narrow hammock, he operated his machine-gun. In front of him sat the driver with his hands on each of two levers, and his feet on the clutch pedals. The driver's work was like that of chauffeur on an automobile, but it was much rougher riding and a good deal more exciting.

A Fleet of Whippets



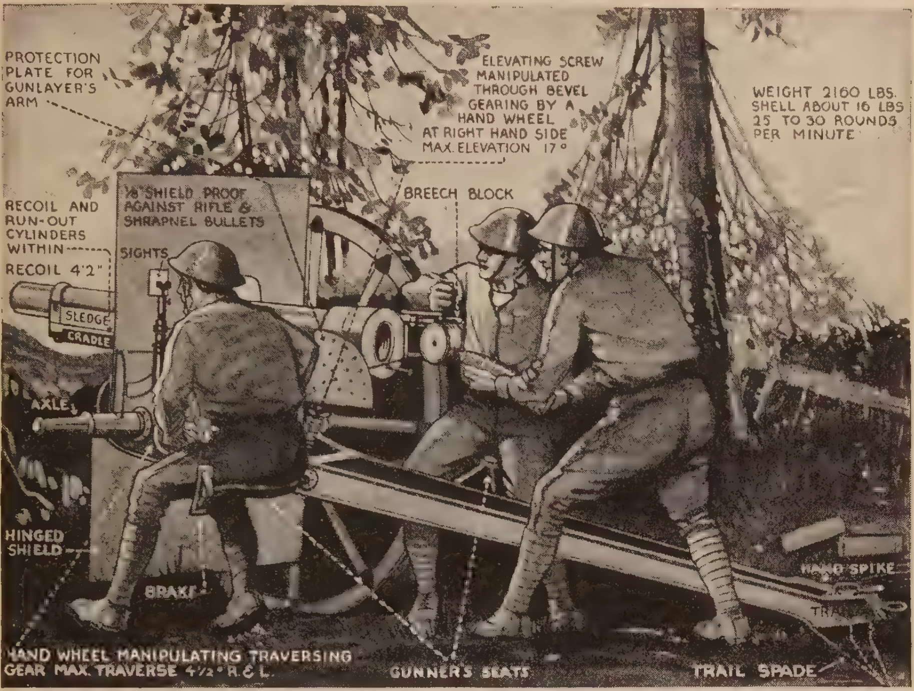
In the lower picture you see a row of small "tanks" drawn up, not near the field of battle but on historic Boston Commons. These small "tanks" were called "whippets." Notice the "V" on the sides. It was placed there because these particular whippets were used in stirring up people to do their full duty in subscribing for the Victory Loan. All the soldiers you see on these whippets—as you can tell from their jaunty little caps—had been over where the real fighting was going on.

Roman Methods in the World War

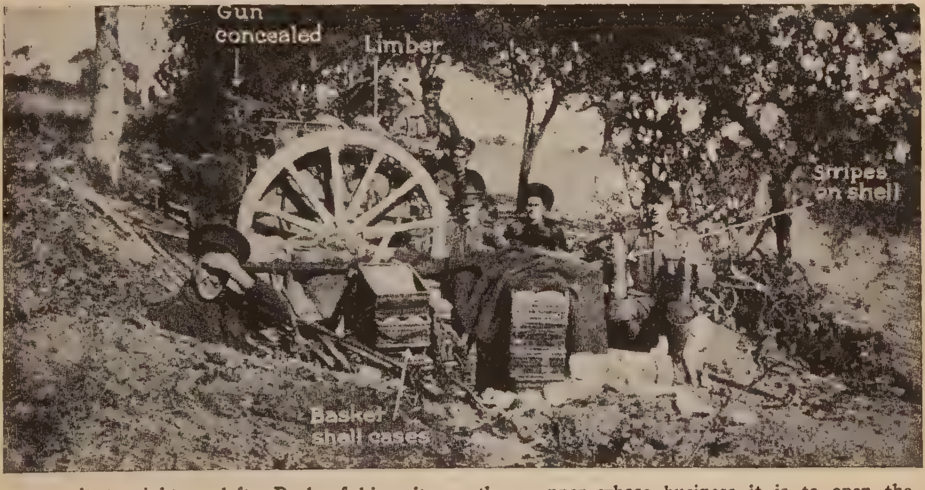

TOUCH HOLE
POWDER CHARGE
SHELL MORTAR GUN
TOUCH HOLE
BOMB
TRENCH MORTAR OR TAUPIA
STEEL SPRING
TRIGGER
GUN COTTON BOMB
"OLD ROMAN ONAGER"
FLYING BOMB
WING OF SHELL
BARREL OF GUN
BRANCH PIECE FOR ADJUSTING ELEVATION
GERMAN MINENWERFER (MINE-THROWER)
FRENCH TRENCH MORTAR AND ITS WINGED SHELL

This page shows you, among other things, how the idea of the engines used by the ancient Romans for hurling stones and other missiles was adapted to modern conditions in the great World War. All other devices represent ways employed in the great war for throwing bombs.

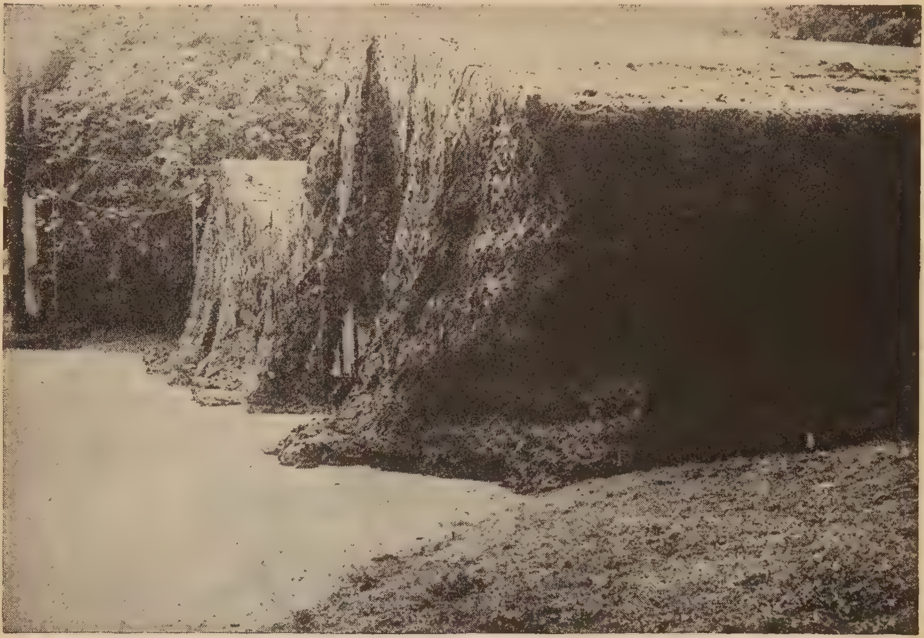
Field-Guns in Action and in Hiding


PROTECTION PLATE FOR GUNLAYER'S ARM
ELEVATING SCREW MANIPULATED THROUGH BEVEL GEARING BY A HAND WHEEL AT RIGHT HAND SIDE MAX. ELEVATION 17°
WEIGHT 2160 LBS. SHELL ABOUT 16 LBS 25 TO 30 ROUNDS PER MINUTE
RECOIL AND RUN-OUT CYLINDERS WITHIN
⅛" SHIELD PROOF AGAINST RIFLE & SHRAPNEL BULLETS
BREECH BLOCK
SIGHTS
RECOIL 4'2"
SLEDGE
CRADLE
AXLE
HINGED SHIELD
BRAKE
HAND SPIKE
TRA
HAND WHEEL MANIPULATING TRAVERSING GEAR MAX. TRAVERSE 4½° R. & L.
GUNNER'S SEATS
TRAIL SPADE

These two pictures show two interesting things about field-guns; the upper picture, a field-gun in action, the lower, a field gun being so placed that it can be fired without being seen. In the upper picture the gunner on the left does the sighting, and by the turning of a wheel with one hand elevates or lowers the gun, while by turning another with the other hand, he moves it to right or left. Back of him sits another gunner whose business it is to open the breach so that the third artilleryman can slide the shell into place. He then closes the breach lock and the gun is ready to be fired. Such a big gun, as you may easily suppose, has a lot of "kick" to it, so it is provided with a device for taking up the recoil. In the rear you see the word "trail-spade," indicating a pointed projection at the end of the gun. This "trail-spade" digs into the ground, since the gun recoils somewhat (in spite of the recoil device), so that on the next recoil it can not back up any farther. The second picture shows where a gun is concealed and the limber or carriage equipment, some shells and baskets of shell cases.


Gun concealed
Limber
Stripes on shell
Basket shell cases

The Place of the Central Brain



Underneath that crude shelter, with his maps and military plans spread on the plain little camp table before him, sat and planned the central brain of the Allied armies in the great World War, General Ferdinand Foch, Commander-in-Chief of the Allies on the Western Front. The shed was covered with a canvas curiously cut up in irregular openings and this so blended with the foliage around it that at a distance it was not observed.

We are proud that every one of the five loans, each for several billion dollars, was over-subscribed. Even the children bought savings stamps.

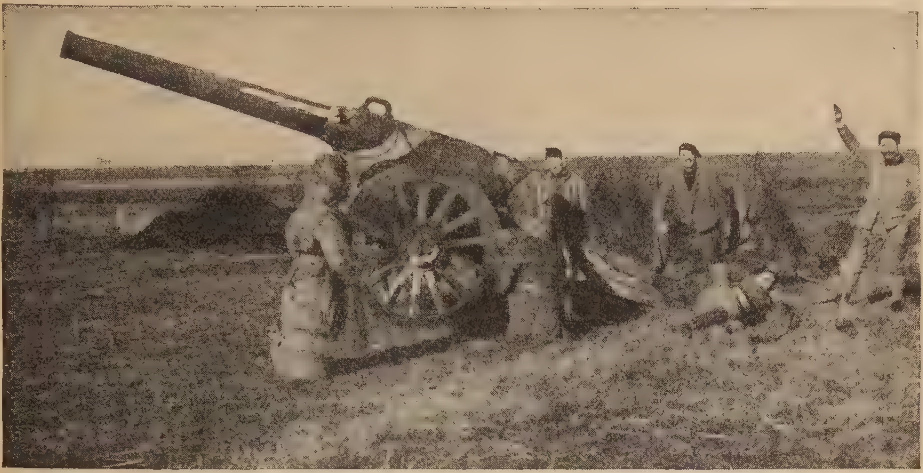
"War to victory!" was the cry, and everyone did what he could to win it. Men who were too old to fight and who had enough money to live on, worked for the government for a dollar a year. Men dropped their business to sell bonds. Women did, too, and they worked in army canteens and the Red Cross rooms. Eight million women knitted socks and sweaters, rolled hospital bandages and made clothing for the wounded. An army of Red Cross nurses and canteen workers went to France. In the first year three hundred million dollars were collected for the Red Cross, Y. M. C. A., Salvation Army, Knights of Columbus, and other welfare workers, besides the big sums of money and the car loads of clothing that were given to the Belgian Relief Fund and the French Orphans.

Work of America's Women

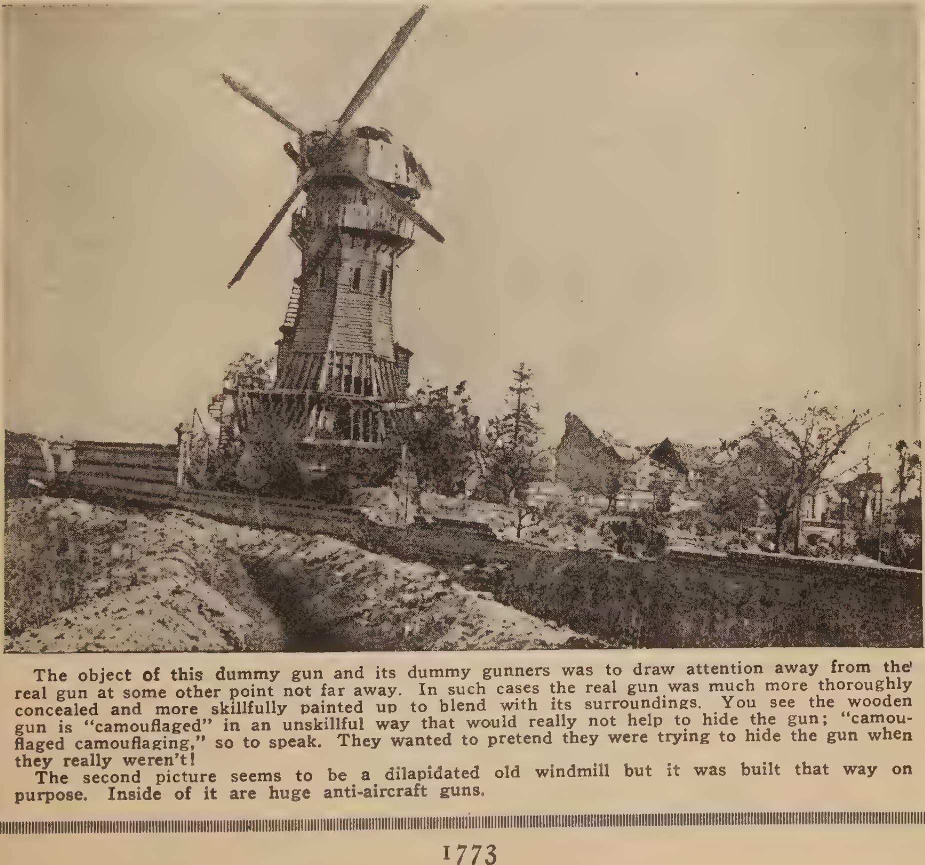
The Children and the Red Cross

The children gave all their spending money, and proudly wore the Red Cross badges. In school they learned to knit warm scarfs and wristlets for the soldiers. They sold savings stamps on the streets, and Boy Scouts sold bonds. The older girls worked in the Red Cross rooms or munitions factories; and college and high school boys worked on the farms so there would be more food to send abroad. And everyone, big and little, lived in cooler houses to save coal for the railroads and war

A Case of Camouflaged Camouflage



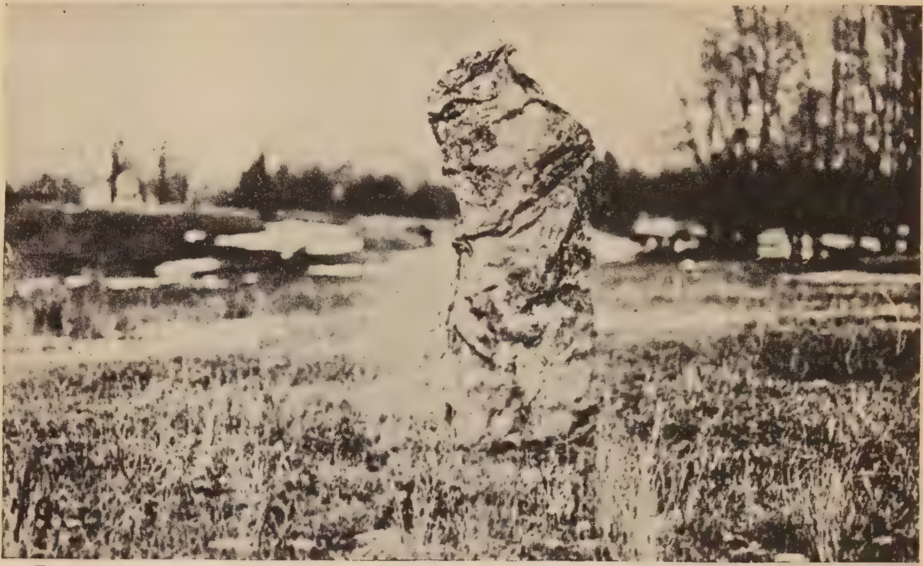
When a goat moth looks so much like the bark on which it is resting that its bird enemies don't see it, we call this "protective resemblance." When in war things are made to resemble other things for the purpose of deceiving the enemy, such deception is called "camouflage." For instance, that isn't a cannon at all, but a big piece of wood and the two figures beside it are dummies. Notice the difference between them and the real soldiers who happened in when this photograph was taken.



The object of this dummy gun and its dummy gunners was to draw attention away from the real gun at some other point not far away. In such cases the real gun was much more thoroughly concealed and more skillfully painted up to blend with its surroundings. You see the wooden gun is "camouflaged" in an unskillful way that would really not help to hide the gun; "camouflaged camouflaging," so to speak. They wanted to pretend they were trying to hide the gun when they really weren't!

The second picture seems to be a dilapidated old windmill but it was built that way on purpose. Inside of it are huge anti-aircraft guns.

Look Out! That Isn't a Stump



There is a man inside that queer looking thing. It is simply a piece of canvas shaped and painted to represent the stump of a tree. The man is a sharp-shooter on the watch.

factories, and cheerfully ate plain food they did not like, so there would be more white bread, meat, and sugar for the armies and for the hungry nations that were fighting beside us.

Early in the spring of 1918, soldiers, money, food, and military supplies began to pour out of the United States. England had to send transports and warships to help us get our armies overseas; and France had to supply us with the guns, airplanes, and "tanks" that we still lacked. And in return we sent them food, and loaned them billions of dollars of money. But best of all were our soldier boys. Two million of them were sent to France before the war was over.

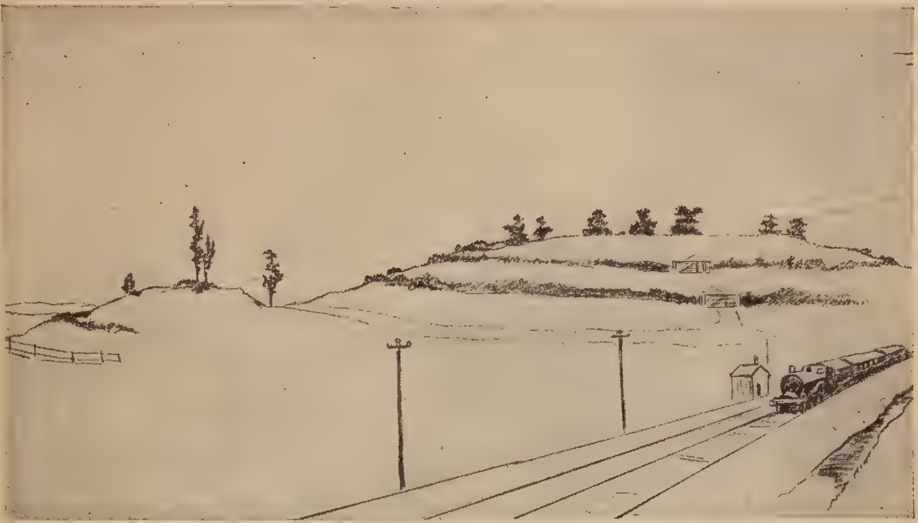
Two Millions of Our Boys in France

England, France, and Italy had used up nearly all their able men, and Germany, having made peace with Russia, had fresh armies to hurl against them. She hoped to win by great, smashing drives before the American soldiers could be trained and taken to France. Her submarines waited in the sea lanes to sink the transports that carried our brave boys. But our transports went in fleets that were guarded by British and American warships. And they got there in time! Just one year after the United States entered the war, American soldiers fought in their first big battle.

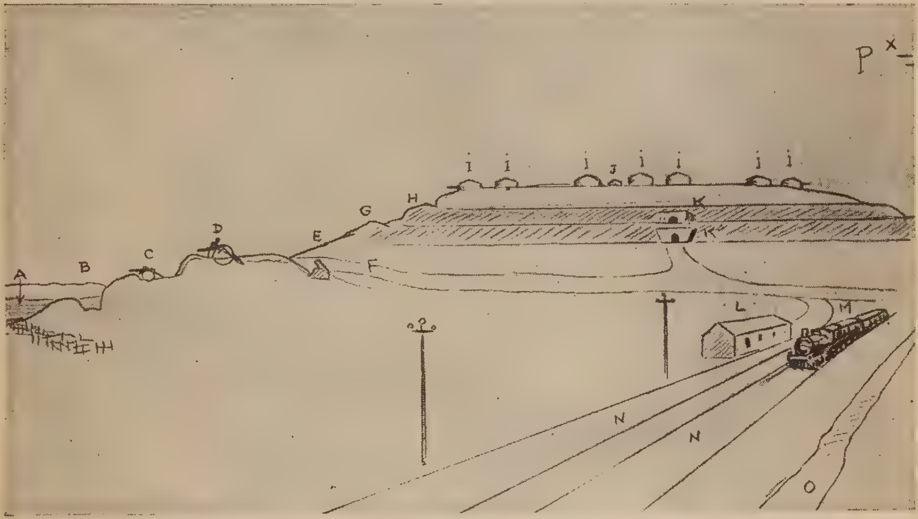
It would take a book to tell you about all the hard fighting of the next six months. The battle line, stretching from sea to sea, across eastern France and northern Italy, was hundreds of miles long. The soldiers from the United States were commanded by General Pershing. But all the allied armies—Belgian, English, British Colonial, French, Italian, and American—were under the command of General Foch, the military genius who was made Mar-

In the Far-Flung Battle Line

Landscape Art and the Art of War



If you met a stranger with a sketch like this, you might not think he was much of a landscape artist, but you certainly never would think his picture wasn't a landscape at all, but a picture of a fort to help aim big guns at it. Just look at the next picture and you will see!

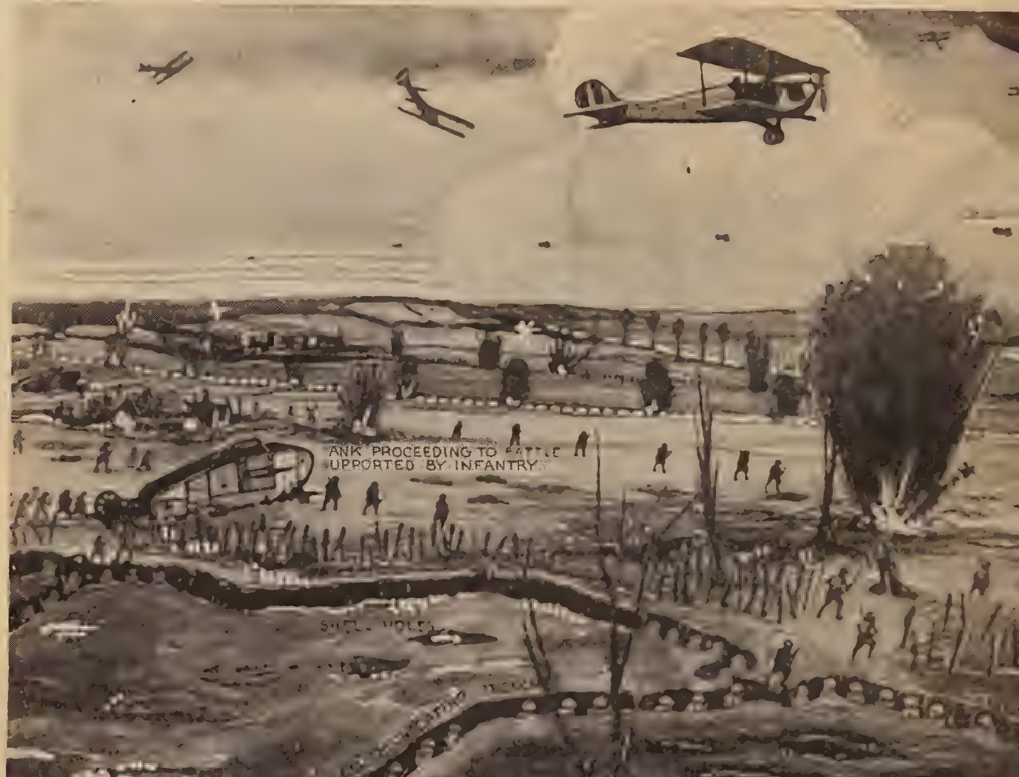


The trees stood for gun turrets, gun positions, and so on; the gates for the entrances to the fort, the lines of bushes for ditches and the fences for a wire entanglement. In the use of such "landscape art" in war there is a regular code, so that when the picture is safe within the enemy lines it can be read just as easily as you can read a puzzle after you know all about it. One kind of tree represents an army gun turret; other forms of trees, gun positions, and so on.

shal of France. American soldiers were in several places, sometimes fighting with the English or French, sometimes alone.

We heard of them at Schieperay, in the Belleau Wood, in the champaign country, at St. Mihiel, which the Germans had held for four years, and at last in the wire-strung ravines and machine-gun nests of the Argonne forest. Fresh and strong, where others were tired and

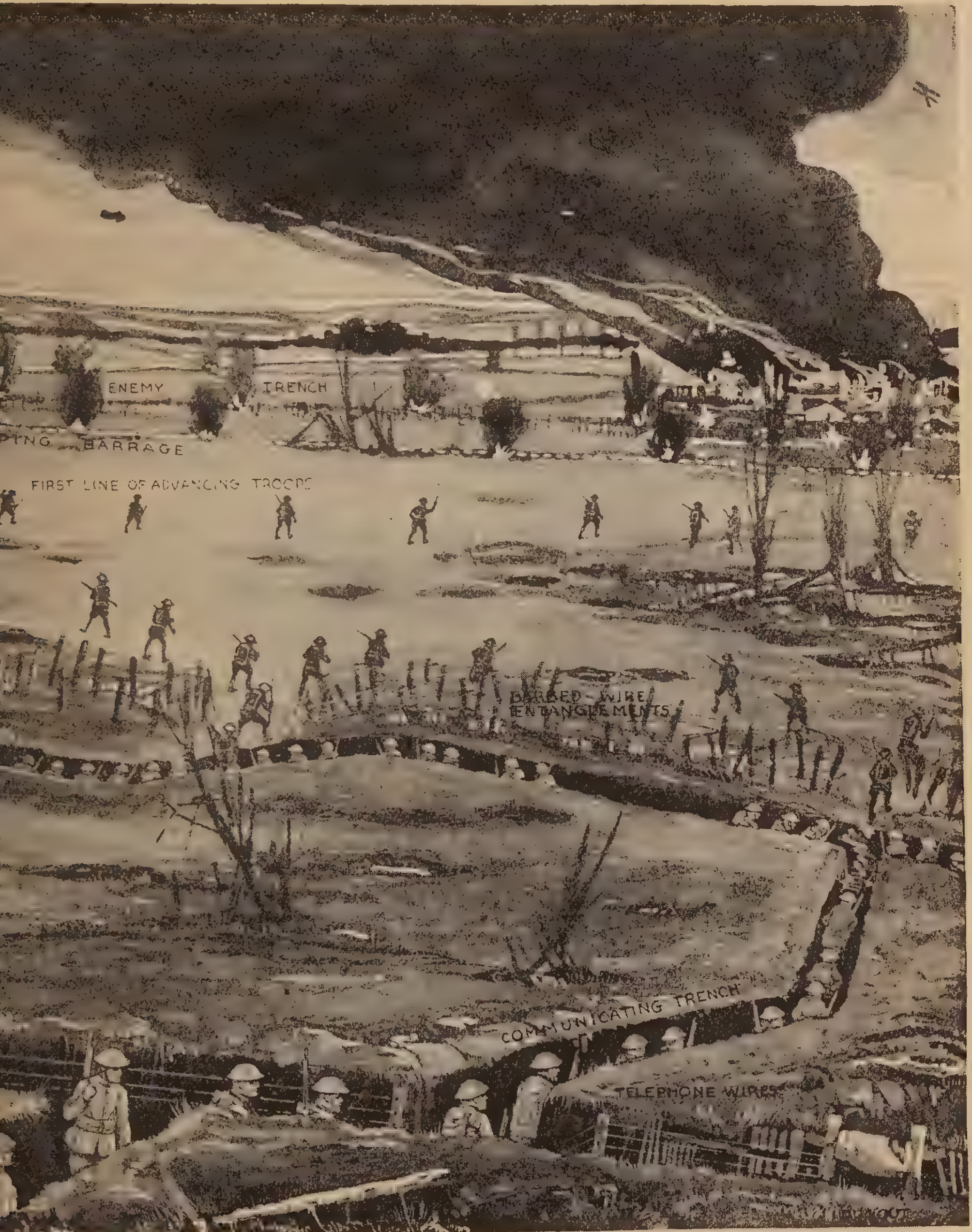
It Meant All This When Ou


ANK PROCEEDING TO BATTLE
UPPORTED BY INFANTRY
SHELL HOLES
TRAVERSE
DUCK BOARDS

This picture shows what a soldier-boy in the World War meant when he wrote home that he had been "over the top." He meant "over the top" of the trenches. This is a trench system of the Allies and an attack is being made on the enemy trenches. Such trenches run zigzag, so that the positions of the men going through them will be constantly changing, thus making it more difficult for enemy gunners to hi them. "Traverses" are sudden angles, making projections behind which men can retreat in case of need when the trenches are invaded. "Duck-boards" were for use of the men in crossing, and protected the wires of the field telephone running under them.

Ahead of the advancing men you note a dotted lin

ldier-Boys Went "Over the Top"


ENEMY
TRENCH
ING BARRAGE
FIRST LINE OF ADVANCING TROOPS
BARBED WIRE ENTANGLEMENTS
COMMUNICATING TRENCH
TELEPHONE WIRES

rked "creeping barrage." A "creeping barrage" was device for protecting advancing troops, and consted in throwing a rain of shells ahead of them. ch a barrage was called a "creeping barrage" bease it moved just fast enough to keep in advance the men who went forward at a moderate rate of eed.

Back of the first line of advancing troops you notice men going through a region of entanglements of barbed wire, woven around posts. These entanglements are to check the attacks of enemies. When the men in the trenches wished to advance, however, paths were opened at intervals by removing rolls of barbed wire so placed as to serve for gates.

worn, they fought with a dash and bravery that won the admiration and gratitude of the world. They furnished just the added force and spirit that were needed to push Germany and Austria out of France and Italy, and make them sue for peace.

And Then Came the Victory

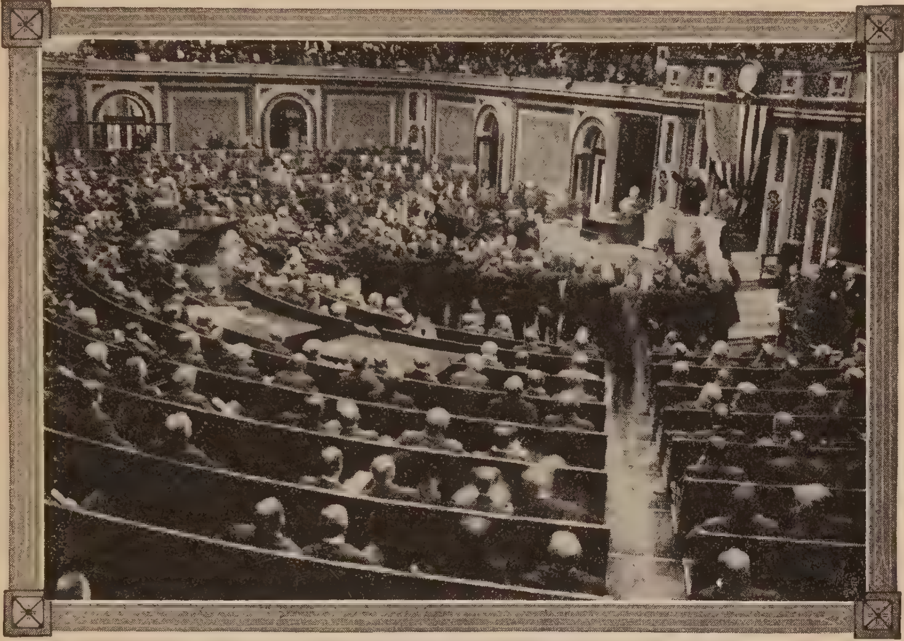
No matter how small you were you never will forget the wild joy of November 11, 1918, when news came that Germany had signed the armistice, and Emperor William had fled to Holland. Bells rang and whistles blew, and people stayed up all night to sing and shout and celebrate the great peace. We were glad, and sad, too, when our soldiers began to come home, for fifty thousand were left behind in their graves in France, and many more had suffered life-long injuries.

The treaty of peace which formally ended the war was signed at Versailles, June 28, 1919. Included in this treaty was the constitution of the League of Nations. This provides a new form of international organization which by means of conferences, tribunals and arbitration seeks to prevent war and to punish any nation or combination of nations which in future attempts to disturb the world's peace.

The League of the Nations

This Peace Conference stands alone in history, not only because it ended the greatest of wars but because of this plan for bringing all peoples into one brotherhood of peace. It was also unique in the fact that for the first time in the history of the United States its chief executive left American soil to take part in it. President Wilson not only represented the Great Republic at the Peace Conference but was recognized as the chief advocate of the plan for the League of Nations and the greatest force in bringing about its inclusion in the peace treaty.

How a Law Is Made



On the First Day of the Session

After a Congressional election the Speaker of the House of Representatives must first swear in the new members before Congress can take up any business. Here is the Speaker with his right arm uplifted, administering the oath to the new members who stand in a body, facing him, with their right hands also uplifted. You can get a glimpse of the gallery, packed with people who have come to witness the ceremony.

THIS is all about "Bill," and his adventures on the way to growing up to be a law.

The Beginning of a Bill

In a republic like ours, where people can speak their own minds, every one may have something to do with bringing Bill up. This is how it is. One day a train runs into a street car. The newspapers tell a horrible story of people who were killed and wounded. People who read about it say: "Grade crossings are dangerous. There should be a law to make railroads elevate their tracks so collisions won't occur."

They talk to their neighbors about it. The newspapers talk about it. In some states, where there is what they call the "Initiative," anybody can get up a petition for such a law, and send it to the legislature. If enough people sign it, the legislature must pass it. If the legislature is not in session or refuses to pass the law that is wanted, a special "referendum" election is held, and the people pass it themselves.

The Introduction of "Bill"

But in most cities, an alderman is asked to introduce such a bill in the city council. A group of citizens may employ a lawyer to draw the bill up in proper form, or the corporation counsel may do it for an alderman. Then, one night, "Bill's" father stands up in a council meeting. Recognized by the presiding officer, the mayor, he says: "I move to introduce an act to compel the railroad companies to elevate their tracks within the city limits."

Bill is born; but he can't walk. A boy page takes the folded, typewritten paper up to the clerk's desk. The clerk reads the title again: "An act, etc." in a voice like a megaphone, so that everyone may hear what it is all about. Then he stands and reads the entire bill aloud. Some one moves that the bill be sent to the Committee on Railroads. This is a small group of members that holds special meetings to talk over railroad bills. Citizens can appear before the committee and say why the bill should or should not be passed. Railroads may say they need five, not two years, to complete the work, as the bill requires.

Reference to Committee

The committee may report that the bill should be passed as it is; or that it should not be passed at all; or that it should have certain changes made in it. Changes are called amendments. When reported back to the council, the amendments must be read three times, and be voted on separately. Then the entire bill must be voted. If a majority is in favor of it, the bill is said to be "passed." It then goes to the mayor to be signed.

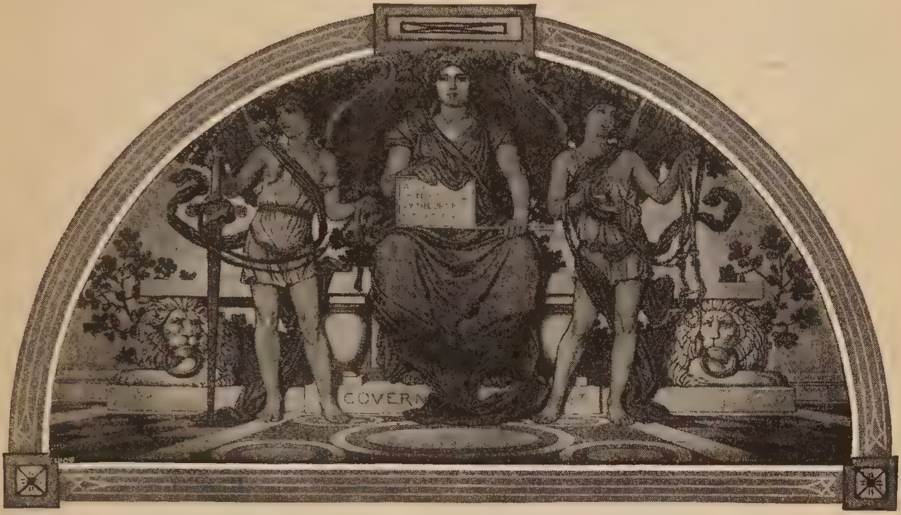
In a state legislature, or the national congress, a bill must be passed by both the house of representatives and the senate, and then be sent to the governor or president. Sometimes a house bill is amended in the senate. Then it must go back to be voted on again. Poor Bill! Trotting back and forth, hustled about, doctored, battered, punched, mended and talked to death, and then started on another weary round, he must get as tired as an office boy. Then he may have to lie for days smothered under a pile of other bills, waiting to be signed. Even then the mayor, governor or president may not like Bill's looks, refuse to sign him and send him back to be altered.

If the law-makers decide to have nothing more to do with Bill, they drop him in the waste basket and he goes to feed the furnace; or they may set him up on their shoulders and, with shouts, carry him right over the chief executive's veto. That means they do not agree that the bill ought to be changed.

But when he is safely "passed," and has grown a downy mustache under his nose, Bill has to stand up and be enrolled. You know what that is like in school. You tell your name and age, where you live, your father's nationality and what he does for a living, when you were vaccinated and how it "took." Teacher writes it all down in a book. There's a committee, and a clerk whose sole business it is to enroll Bill in the law books. Any tiny mistake in writing it down, and Bill's ambition to be a grown-up Law is smashed as flat as the pin you lay on a rail for a train to run over. Haven't you done it?

The Day of Enrollment

We See the Wheels Go 'Round



© Horace K. Turner

This painting forms part of the wall decoration of the Congressional Library in Washington. It is over a doorway and is one of a series by the eminent American artist, Elihu Vedder.

DID you notice how the three departments of government work together? A well-managed country is like a watch with three big wheels. Each wheel is independent, but all of them fit together and turn on each other.

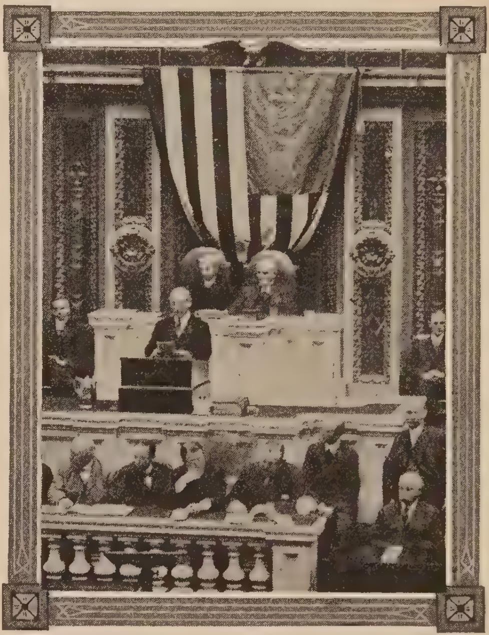
Things a Good Mayor Does

The mayor is head of the executive department of a city. It is his business to see that the laws are obeyed. Yet he has something to say about what the laws should be. His police, health, fire and other officers are always going about the city. They see things that should be done, or forbidden. They report these to the mayor, and the mayor reports to the city council, and advises the members. Sometimes the council takes his advice and sometimes it doesn't. But if the council passes a law of which the mayor disapproves, he can refuse to sign it. This is called the veto power. He sends the bill back with his reasons for not signing it, in writing. If two-thirds of the members still think the proposed law good, they can pass the bill over the mayor's veto.

Governors, Mayors and Presidents

The governor of a state is in the same position toward the state legislature as the president toward congress or the mayor toward the council. It is the duty of the governor to advise the legislature as to what new state laws are needed. But as he does not preside over the meetings he sends his advice in a long public letter, or message. A state legislature is divided into two bodies. The house of representatives chooses a speaker from their own number, to preside. The lieutenant governor acts as president of the state senate. All bills must pass both branches and be signed by the governor. The governor, like the president and the mayor, has the right of veto; and a bill can be passed over his veto, if enough members vote for it. Usually two-thirds is necessary.

The President Addressing Congress



© *Harris & Ewing*

Here you see the President delivering an address to Congress. Who are the men seated behind him? You guess that one is a presiding officer, which is quite right, but what office does the other hold? Since the President is addressing Congress, that is, both the Senate and the House of Representatives, the presiding officers of both bodies are there. The one on the left is the Vice-president who presides in the Senate, and the other is the Speaker of the House. Which branch of Congress, the Senate or the House, is host on this occasion? Another question will tell you the answer. Which branch meets in a room large enough to accommodate both? The men with notebooks before them are reporters, taking down the President's speech for tomorrow's newspapers. Why aren't they facing the President? See if you can tell. These seats are reserved for reporters at all meetings of the House and in the regular sessions they will get more of what is going on by facing the members instead of the Speaker. Why? Who does most of the talking in a legislative body, the "Speaker" or the members?

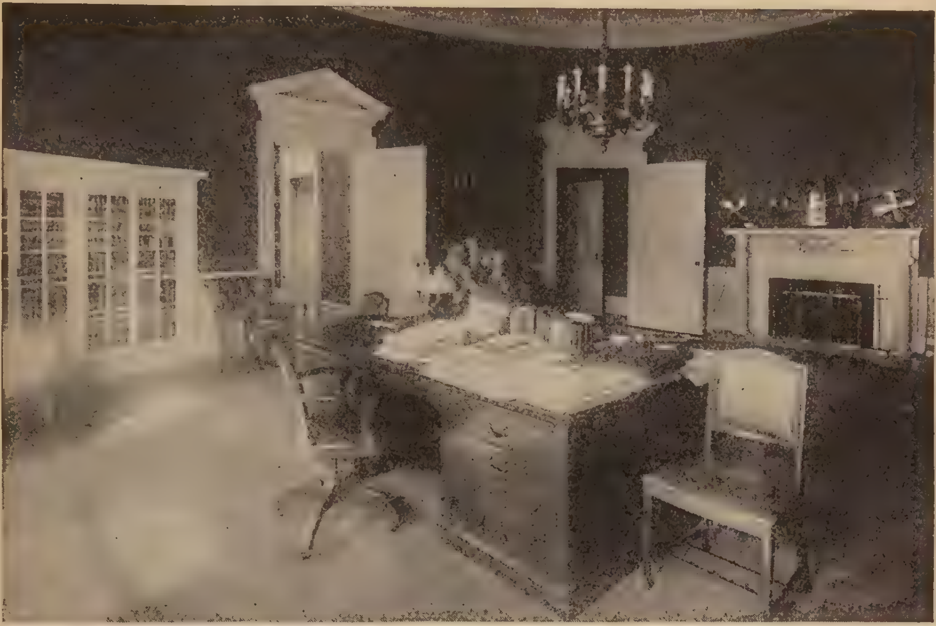
You would find the same thing true of the national government in Washington. When a new president comes into office, and every year, when congress meets, he sends a long message to the law-makers. He reviews every important work of the government, and every question that people are talking about, and says what he thinks should be done about them. The newspapers always print the president's message in full, and citizens everywhere talk about it.

Executives and the Veto Power

Mayors, governors and the president save us from bad laws by vetoing them, and sometimes they delay or prevent the passage of good ones. They make mistakes, but we have found that the veto power is a good thing for them to have. It gives our law-makers a chance to think again, and second thoughts are often best.

The judges have something to say about some laws. As a city is governed under a charter, which says exactly what it is allowed by the state to do, so the states and the nation are governed under written constitutions, which say what they may do. Our United States constitution was adopted by the thirteen states when the government was formed; and the other states had their constitutions approved by congress, when they

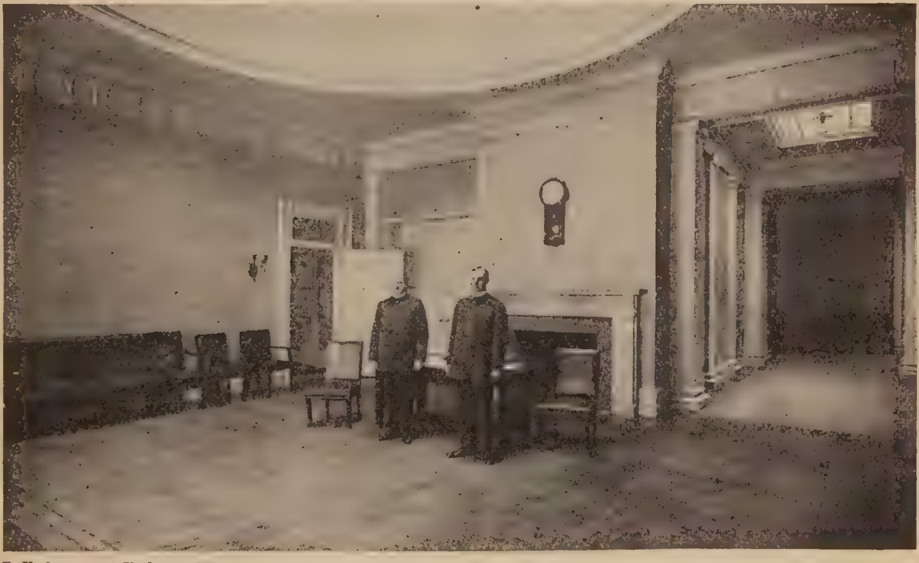
The President's Private Office



© *Underwood & Underwood*

Here is the room in which the President discusses business of a confidential nature. It is in the Executive Office west of the White House. It is large and comfortable, but no more elaborate than the offices of hundreds of successful business men The piles of paper waiting for the President's attention give you a hint of what a busy man he is, how many things have to be attended to every day.

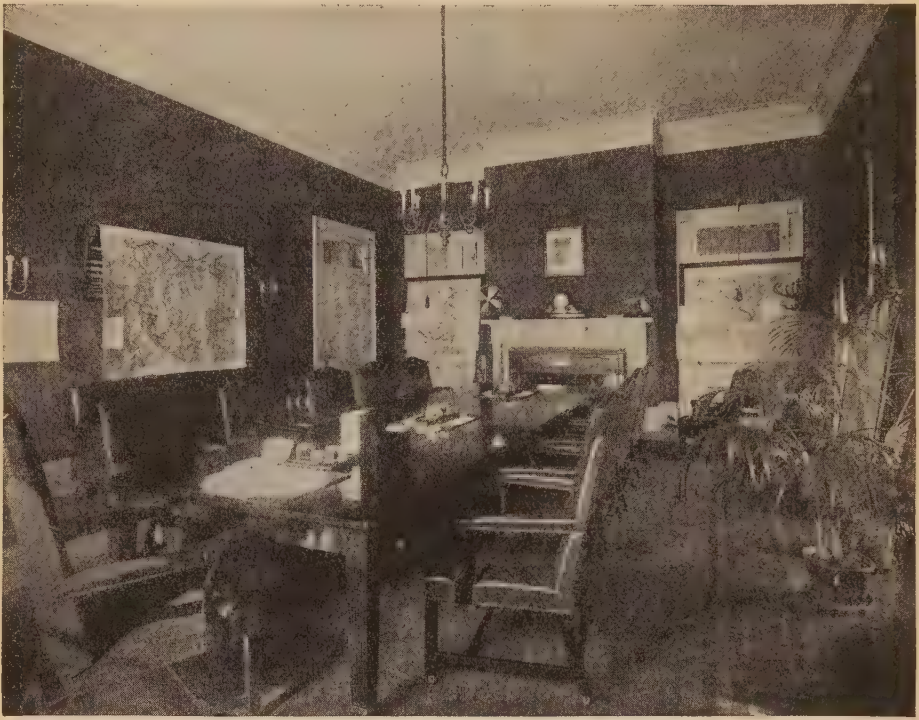
The President's Door Guards



© *Underwood & Underwood*

This is the reception room leading to the President's office in the White House. The two guards are always here to protect the President from anarchists and other troublesome people who may get into the White House, pretending to have business with the President.

Where the Cabinet Meets



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When a full Cabinet meeting is called to discuss some question of importance, it takes place in this room. The President sits at the head of the table facing his Cabinet. The three maps illustrate phases of the European war, which the cabinet was discussing at the time this picture was taken. Under one of them is a whole rack of other maps, you see.

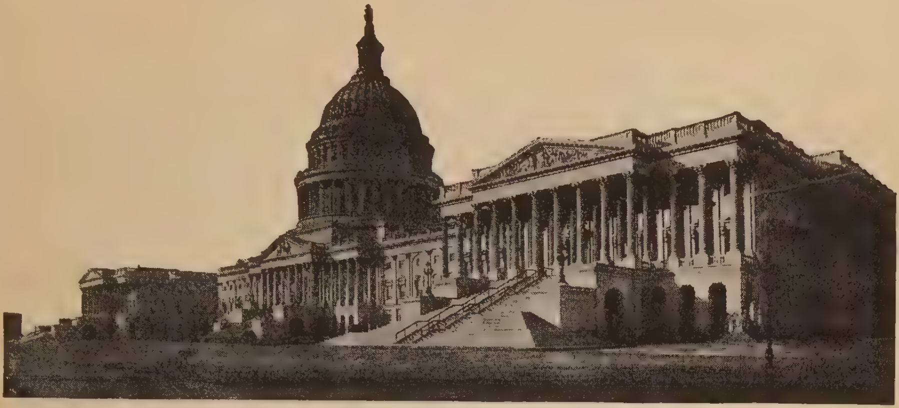
were admitted to the union. These can be changed only by amendment, on which all the citizens must vote. A legislature or congress cannot pass any law that is forbidden by the constitution. For instance, every one who is accused of a crime has the right to a trial by jury. That right cannot be taken away from him by a new law. There are so many things in the constitution that few can remember all of them. So, blunders are made and the courts set a law aside, as unconstitutional.

How Law Makers Check Executives

But if the mayor can advise the council and veto bills, the council can act as a check on the mayor. He appoints the chiefs of police, fire, health and hundreds of other officers, but he must send the names of the people he appoints to the council. Usually they are approved, but sometimes they are criticized and thrown out. The council can refuse to give him all the money he wants, to do the work of the city. And if a mayor or city court judge neglects his duty or breaks the law, the council can turn itself into a court and try him. If guilty it can turn him out of office. This is called impeachment.

A governor, too, must send the list of his appointments to the legisla-

Where the Biggest Wheel Is



The wheel that sets all the other wheels to going is in this building, the Capitol at Washington. It is the office building of the United States. In it Congress meets to pass laws, the President transacts official business and the various departments have their headquarters.

ture. That law-making body can impeach the governor, other state officers and state court judges. The president, vice-president, federal and supreme court judges and other officials can be impeached by the senate, or upper house of congress. The president must submit the names of cabinet members, foreign ambassadors and consuls and federal and supreme court judges and other officials to congress, for its approval. Legislatures and congress hold the purse strings. It is the law-making bodies that say how much money is spent and what it is spent for.

A Watch That Keeps Watch

Isn't that like a watch? Here are three wheels, each doing a lot of work by itself, but if they did not move with the others, and turn on them smoothly, they would all come to a stop. When you come to study the government of a big city you will also see dozens of little wheels. But they are all connected with one of the big ones. In any government, either of a small town or the greatest empire, there are only three departments. There are the men who make the laws, the men who see that the laws are obeyed, and the men who settle disputes between citizens and punish law breakers.

The Ship of State

Thou, too, sail on, O Ship of State!
Sail on, O Union, strong and great!
Humanity with all its fears,
With all the hopes of future years,
Is hanging breathless on thy fate!

LONGFELLOW

How Courts Settle Disputes

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This picture shows the Supreme Court of the United States in session. The Chief Justice sits in the center, under the eagle's spreading wings, and the eight other judges making up the court are ranged on each side. The lawyers are sitting at the tables below and one of them is addressing the court.

"THOSE marbles belong to me."

"No, they don't. They are mine."

Marbles look much alike, and each boy may honestly think the ones in dispute are his. Savage people settle such questions by fighting. The stronger always has his way whether he is in the right or not. In civilized countries, when men cannot settle their disputes peaceably, they ask a court of law to do it for them.

In a Case of Marbles

If you have a school city the two boys to a dispute should go before the judge and tell their stories. Others who know anything about the matter should be called as witnesses. Whichever one proves ownership should have the marbles. Either boy may ask a jury trial. In that case the judge is obliged to call in six or twelve boy and girl citizens to decide the case.

There is a way to settle such disputes out of court. Each boy may chose a friend to act as his lawyer. The lawyer of the boy who has the marbles may say to him: "This is going to be pretty hard to decide. Why not offer the other boy part of the marbles? If you take the case into court, he may get all of them." The other boy's lawyer advises his client to accept the offer, because the court might decide that none were his.

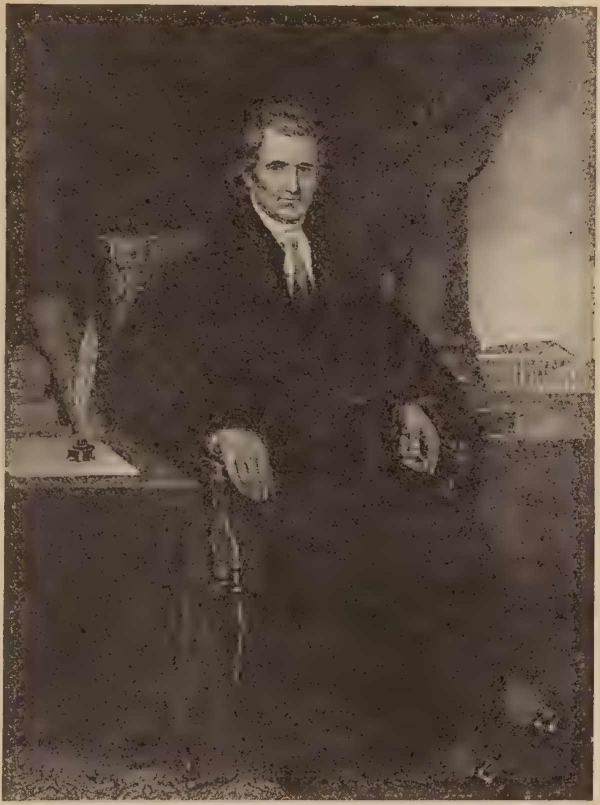
The Different Grades of Courts

In a real city or town, a legal dispute would be heard in a justice, or police court. No place is so small but it has a justice of the peace, who decides disputes involving small amounts, and fines people who are disorderly. Disputes about larger amounts of money; the distribution of property under wills; the guardianship of orphan children and the care of their property; and serious crimes, such as burglary, are settled in higher courts. In every county seat there is a courthouse for these higher courts, and a state supreme court in the state capital.

Then, there are United States, or Federal courts, which hear disputes between states, between citizens of different states, and where those who break government laws are tried. Anyone who robs a post-office, who breaks the national banking laws, who smuggles goods into the country without paying the tax on them; who sells government secrets to foreign countries; who deserts from the army or navy, or attempts to kill the president, is tried in a Federal court. Big cities have all three kinds of courts. The highest court of all, the Supreme Court of the United States, sits in Washington, and the justices are appointed by the president.

What the Highest Courts Do

Our Greatest Chief Justice



John Marshall became Chief Justice of the Supreme Court a few years after government under our constitution began. By his wise decisions and his thorough knowledge of the law, John Marshall gave people confidence in the new government and established the constitution on a firm foundation.

Let us see what happens when a case gets into court. Any civil suit can be settled out of court, as the boys settled about the marbles. But a charge of crime must be tried. A civil suit is decided sometimes by a judge, sometimes by a jury. Every man accused of a crime, for which he may have to go to prison or forfeit his life, has the right to demand a jury trial.

The jury system was begun hundreds of years ago by the Saxons in Germany, to protect innocent people from persecution by enemies, kings and nobles. The Saxons took their jury trials to England, and English colonists brought them to America. When our government was formed, this precious right of trial by jury was put into the Constitution. Even the government cannot take this right from its citizens. It is the duty of every voter to serve upon a jury when he is called upon to do so, unless he is ill or has some other good excuse. Great care is taken by the court, in the selection of a jury of twelve "good men and true" who will give the accused a fair trial. It is a solemn moment when the judge says: "Stand up and be sworn, gentlemen."

The jury must listen to the arguments of lawyers, and to the sworn testimony of witnesses on both sides, and make up their minds from the evidence. The judge instructs them in the law. In a room by themselves they talk the case over and vote upon it. When they have made a decision they return to the court room and the foreman hands in the verdict. That is another solemn moment when the judge inquires "Guilty" or "Not guilty."

Rights of New Trial and Appeal

If a jury disagrees, a new trial is ordered. And if either party to a suit is dissatisfied he can demand a new trial. In criminal trials, the state or the United States is one party, and is represented by a prosecuting attorney. The decision of a justice court can be appealed to the state courts, up to the state supreme court. A case begun in a federal circuit court can be carried up to the United States supreme court. Many decisions of the lower courts are over-ruled or sent back for retrial by the upper ones. Great civil and criminal cases are often taken from one court to another for years. But they are settled at last, and everyone concerned is obliged to abide by the decision. Around our entire system of local, state and federal courts, countless safeguards are set, to secure justice for everyone.

Quarrels are settled by law, not by using fists. And people charged with crimes are not punished by the angry victims, or by mobs, but bv the courts, after fair trials.

The judge is the presiding officer in a court. He sees that all the requirements of the law are observed in the selection of the jury, the examination of witnesses, and everything else that goes on in court.

After all the testimony has been given he reads, and afterwards turns over to the jury, a written statement called the "charge," which tells the jurymen what the law is with regard to the points in controversy in the case. The jury decides what the facts are, according to the testimony, and then gives a verdict for the plaintiff or the defendant in accordance with these facts and the law as laid down for them by the judge.

How Uncle Sam "Makes Money"

The U. S. Customs House in New York City

In large cities, in various parts of the country, Uncle Sam has offices for the men who attend to the collection of the internal revenue and the tariff on articles imported into the country. In the very largest cities, like New York, he has buildings of his own for these offices. This is a picture of the U. S. Customs Office in New York City. The sculpture groups in front of the building are by Daniel C. French. One of them, "America," we have reproduced as the tail piece to the Geography article on America. You can tell where it is by comparing the two pictures. The other three groups represent Europe, Asia and Africa. You see, we import things from all over the world. Uncle Sam's revenue officers know a great deal about Geography and it's as interesting as a story book.

YOUR "Uncle Sam," or the United States, has to spend hundreds of millions of dollars every year. But before he spends it he must earn it, just as your father earns his money. He does many things for all of us that no one could do for himself. So every one must pay him something, even children.

You think you don't give him any money? Why, every time you mail a letter you must pay Uncle Sam's postoffice two cents for a stamp. It goes to pay for the mail service. The tax on incomes is another source of revenue. There are many things you use, upon which you pay what is called an "indirect" tax, which

Inspecting Imports

These men are U. S. revenue officers, and they are examining imported goods to see whether the proper amount of duty has been levied on them. Sometimes the men who import the goods have different opinions from Uncle Sam's officers as to the value of the goods, what class they come under, and so on, and the officers have to look into this. Duties, as you know from your Arithmetic, are either levied according to the class in which the goods belong, or according to their value—"ad valorem."

goes into Uncle Sam's savings bank. On coffee, rubber, watches, dolls, and other things grown or made in foreign lands, a customs duty, or tariff, must be paid at the seaport, before they are admitted to be sold in our country. This tax is added to the selling prices of the articles.

Another form of indirect tax is the revenue tax on such things as cigars and tobaccos. Did you ever notice a long, green stamp around one end of a box of cigars? That is an "internal revenue" stamp that the manufacturer is obliged to buy of Uncle Sam. The stamps on packages and bottles are cancelled, as they are on letters, so they cannot be used twice.

Sales, Rentals, and Tolls

Uncle Sam gets some money by selling his public lands, by renting coal and other mineral lands to mining companies, by selling timber from forest reserves, and water from irrigation ditches; and he charges a toll on the tonnage of ships passing through the Panama Canal. But for many years most of his money came from the tariffs on imported goods. When it was decided to let in necessary articles, such as sugar, free, or at lower rates, Uncle Sam had to look about to see where he could get enough money to keep the country going. By an amendment to the Constitution, which was voted on and accepted by the states, congress was allowed to put a direct tax on the incomes of citizens.

How Uncle Sam Spends His Money

What does he spend all this money for? Well, he has to pay the expenses of congress, of the president's department, of the federal courts, of the ambassadors and consuls who take care of our interests in foreign countries, and of the army and navy. He has to improve rivers and harbors, build postoffices and other government buildings.

He can pay for all these things without much trouble. But when he has a war on his hands, or a big piece of work like irrigating desert lands or digging the Panama Canal, he is obliged to borrow money. People of our own and of foreign countries are glad to loan money to Uncle Sam. They take his promissory notes, called Government Bonds. These draw interest every year and are payable in a certain number of years. Uncle Sam is such "sure pay" that his bonds draw a low rate of interest. They are as good as cash and the owner of one can sell it any day.

Now, you know, Uncle Sam runs a printing office to make paper money, and several mints for coining gold and silver. Wouldn't you think he could take what he needed, and not have to collect it from the people, in taxes, and borrow? But the money he makes isn't his. He is only the people's agent and treasurer, to supply a safe medium of exchange for carrying on the business of everyone.

Uncle Sam's Pockets

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Uncle Sam cannot put all his money in his pocket for two reasons: one reason is that there isn't any "Uncle Sam," really, and another is that there is so much of this money that it would not go into anybody's pocket. So they have a lot of "pockets" for it in the shape of stout canvas bags like these. The bags, when they are filled, are put away in the vaults of the Treasury at Washington. Each of the bags you see here has a thousand dollars in it.

Just What is Money?

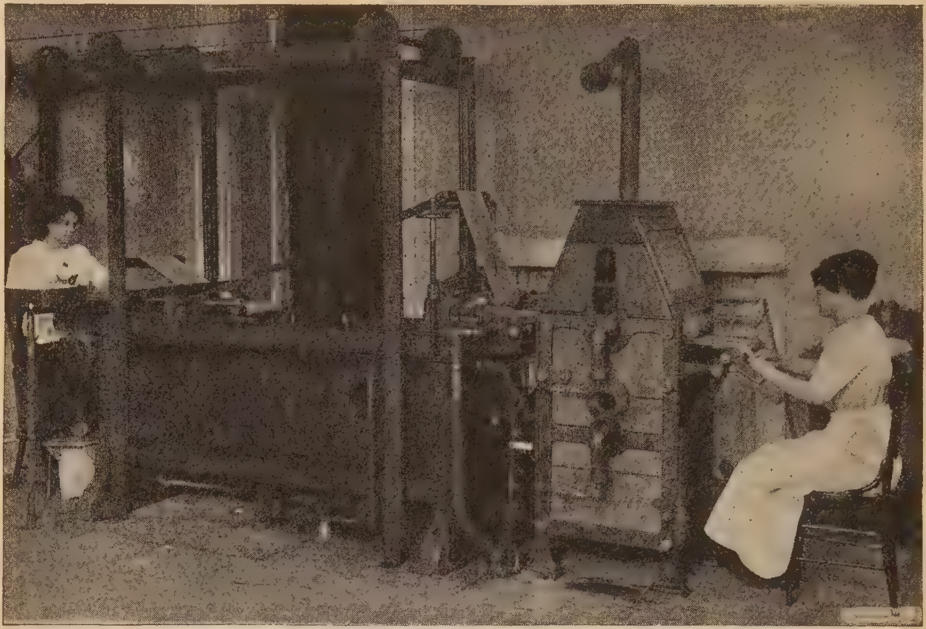
What is money, after all? Why, it is what you buy things with. But *real* money must have value in itself. Gold and silver have value. Coins can be melted and sold. But a paper dollar has no real value. It simply stands for money. People use it for buying and selling things because it is more convenient than coin and they can always exchange it for coin. On a two dollar bill is printed these words:

"This certifies that there have been deposited in the treasury of the United States of America, two silver dollars."

The real money is the silver. The paper money is Uncle Sam's promise to pay its face value. Green bills are silver certificates; yellow bills, gold. National banks are allowed to issue paper notes by depositing government bonds with the treasury. Uncle Sam cannot make as much paper money as he pleases for himself or for the banks. He can make only as much as he has gold, silver and bonds in his treasury to redeem them with.

Money is printed on a special

In the Money "Laundry"



Every day is "wash day" in the Bureau of Printing and Engraving in Washington, where Uncle Sam makes his paper money. Paper money is handled so much that it is likely to carry disease germs, and before being sent out it is run through this machine which cleans and sterilizes it. Notice that the girl on the left is feeding the money into the machine which carries it along and passes it through the sterilizing apparatus until it comes out "spick and span" at the other end.

Paper Money and the Coinage

kind of paper that only one factory is allowed to make, and for one customer, and that is Uncle Sam. It is very tough and smooth, and has little red and blue silk threads scattered all through it. The bills are printed from plates of steel, beautifully engraved by hand. Each bill is numbered and is signed by the secretary of the treasury and the registrar. The seal is stamped on last. See how many things you can find on a dollar bill.

The owners of mines are willing to exchange gold and silver bars, at the mints, for these paper promises to pay, of Uncle Sam's, because his promise is "as good as gold" and the paper is convenient. The metals are melted, rolled into strips, cut into round blanks by steel dies, weighed, stamped with the designs and "milled" about the edges.

To Prevent Counterfeiting

The greatest care is taken with the paper, engraving, inks, printing, numbering, signing and sealing of paper notes; and with the minting of coins. That is done so that not one can disappear while being made; and to make it difficult for any one to alter or copy them. But clever criminals sometimes counterfeit both paper notes and gold and silver coins. Uncle Sam has secret service men, or government detectives out all the time, hunting for counterfeiters. A bad coin is duller in color than a good one, usually weighs less, the design is not so sharply cut, and when dropped it does not give the "ring" of gold and silver. Bad paper money has a different feel to

The Paper that Stands for Money

the touch. It lacks the little colored silk threads, and the engraving is not so carefully done. Often something will be missing—a number or signature.

If you should get a piece of counterfeit money, do not try to buy anything with it, as that is against the law. Ask the person who gave it to you to take it back and give you good money. He probably did not know it was bad. If you don't know where you got it take it to the nearest bank to be sent to Uncle Sam in Washington. That will help him catch the man who made it. And that is one big item of expense, to Uncle Sam—to guard our money, to make sure that every dollar paid to every citizen, for work or goods, is worth one hundred cents.

Don't you think he earns all we pay him?

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Paper money isn't real money at all, you know. It's either Uncle Sam's promissory note, or it is a certificate, saying that so much gold or silver has been placed on deposit with him. He has to have the real money in the shape of gold and silver, such as you saw in the bags, to "back up" these promises and these certificates. The colored man you see here is putting the seal on paper money done up in packages.

The Sweetest Lives

The sweetest lives are those to duty wed,
Whose deeds, both great and small,
Are close-knit strands of an unbroken thread
Where love ennobles all.
The world may sound no trumpets, ring no bells;
The Book of Life the shining record tells.
Thy love shall chant its own beatitudes
After its own life-working. A child's kiss
Set on thy sighing lips shall make thee glad;
A poor man served by thee shall make thee rich;
A sick man helped by thee shall make thee strong;
Thou shalt be served thyself by every sense
Of service which thou renderest.

ELIZABETH BARRETT BROWNING.

Where We Got Our Dollar Sign

Some History Back of the Dollar

IN every German speaking country there is a coin called the thaler—pronounced tah-ler. The people of Holland and the other low German countries say dah-ler. The coin and the name were brought to America by the Dutch who settled New York. The English colonies of New England and the South used the English coins of pounds, shillings and pence. As there were so many more English than Dutch settlers in America the name would have disappeared if it had not come to us again from Spain. The Spanish people, from a long period of fighting and trading in the Netherlands, had found it necessary to coin the thaler. They called it a "peso," but other trading nations called it the Spanish "dollar." In 1750 Great Britain sent nearly a million Spanish dollars to Massachusetts to pay war expenses. The coin was worth four shillings sixpence, or one dollar and eight cents. After the Revolution the United States adopted its own decimal system of coinage, making the dollar of one hundred cents the unit of value.

But Is It "U. S." or "Pesos"

When this American money first came into use it was always referred to as United States, or "U. S." currency. Some authorities think the dollar sign ($) is an abbreviation, the S being written over the U. Others think it an abbreviation of the Spanish *pesos*. But it may also be a short form of 8/8. As our dollar is ten dimes, so the Spanish dollar was eight *reals*, a *real* being a small coin worth ten or twelve cents. The Spanish dollar was often called "a piece of eight."

Working for Uncle Sam in the Civil Service

THE United States has more than one hundred thousand "jobs" for those who want to work for him. They are in the Civil Service, which includes every department of the government under the President's office, except the army and navy. When you are seventeen years old you could get one of these places—one of the lowest clerkships to begin with, and a chance to work up, if—

Character of the Work

Just like any other employer, Uncle Sam wants to know some things about the people he hires. He will give you a trial if you are honest and in good health and if you can get an average of 70 in reading, writing, spelling and arithmetic. One who expects to get into the post-office service must be good in geography; one with business college training or office experience, should ask for a bookkeeper's or stenographer's position in Washington, or a local government building. And there are a number of fine places for teachers, electricians, engineers, surveyors, chemists, draftsmen, foresters, mineralogists and specialists in plant and animal life. These are sent to the Philippine Islands, Panama and Alaska, into the irrigated lands and national parks, to agricultural colleges, and to do expert work for Uncle Sam in Washington.

Under the Old "Spoils" System

All these places used to be given to men who worked to put some party in power. After every election, when the party changed, thousands of government employes were discharged. Members of the winning party took their places, often not to do the work, but to draw the salaries. No one was examined for fitness to do the work, or discharged for incompetence.

That was not business-like. As the people of the United States were paying the bills they insisted upon a change. Now, under the civil service law, government employes must pass examinations. No employe is asked about his politics, nor can he be asked to give either time or money to political work. The positions to be filled are divided among all the states according to population, and examinations are held twice a year in each state. Anyone can learn about the times and places of examination by writing to the Civil Service Commission in Washington.

The questions are prepared, not by the commissioners, but by boards of examiners made up from among employes of the departments. It was found that men in the postoffice department, for instance, know best just what a beginning mail clerk or letter carrier should know. Those who get the highest marks are put at the head of the list, and are offered the first vacancies. Physical fitness is considered too. Crippled people often have bright minds and can do office and laboratory work well. But a forest ranger must be able to tramp and ride in all weathers, camp out, and endure many hardships. A railway mail clerk must be at least five feet six inches tall, weigh one hundred and thirty pounds and be quick of eyesight, hearing and movement. Mail cars are sometimes attacked by robbers, and the safety of money and valuables depends upon the quickness, strength and courage of the clerks.

Getting Marks Under Uncle Sam

Trying Out the Applicants

When a vacancy occurs in a department of the government the chief in charge sends word to the Civil Service Commission. Three names that stand highest, on the list of the kind of place to be filled, are sent. The first is notified to report for a six months' trial. If his work is satisfactory he has a permanent position. He cannot be discharged except for good reasons that must be reported in writing to the commissioners. Anyone who gets a place under Uncle Sam not only has a life job if he does his work well, but he can win promotion. Mr. George B. Cortelyou started as a stenographer in a department. He was such a good one that he was sent to the White House, to write President Cleveland's letters. He became private secretary to President McKinley, filled three cabinet secretaryships under President Roosevelt, and was made chairman of the Republican National Committee.

The Case of Cortelyou

There are other chances in the Civil Service besides those of promotion. Washington has good schools of law, medicine, engineering and other professions. The hours in government offices are short. Young men and women earn money to finish their education. After graduation they go into other businesses for themselves. Forty thousand vacancies are made every year, in this and in other ways, making room for a new lot of ambitious young people who want to work their way through college.

Stepping Stones for Other Work

Many states and cities now have their own civil service systems for state and city employes. Citizens saw how much better the work of the schools, libraries and postoffice was done, under the merit plan. They are now insisting that policemen, firemen, health officers, managers and attendants in institutions and hospitals, and all public employes, except those who are elected, should come under civil service rules.

What do you think about the civil service idea?

How Uncle Sam Helps Us Save Money

A Postal Savings bank

It's just as it says on that notice between the two windows: "This Postoffice is a Postal Savings Depository." The reading matter on the notice tells just what to do in putting money into a postal savings bank and taking it out. The man on the left is putting money into the bank, and the one on the right is taking it out. You know—or will know when you have read this story on how Uncle Sam helps us to save money—that "to get money out you write on the back of the certificate the amount you want to draw, and sign your name."

UNCLE SAM has been peeping around corners for years, watching big people and little ones spend pennies, nickels and dimes for foolish things. "Dear, dear! This won't do, at all," he said, and sometimes he whispered in their ears:

"Why don't you put the money you don't need to spend into a savings bank?"

"There is too little of it; the bank is away down town; and besides, banks sometimes break. Besides, I have an old stocking, or a hole in the ground, for my savings."

"And never earning a penny! At Washington I have a silver dollar that was buried fifty years, and is green with mold. In a savings bank it would have earned two dollars in that time. The banks do care about pennies, for they grow into dollars, if put to work. And it is not the amount of money saved that is so important, as the habit of saving, and the business training of keeping accounts, and counting the cost."

Establishment of the Postal Banks

So Uncle Sam thought he would better help his boys and girls, and people who haven't the banking habit, to save money. You can open a savings account with a ten cent piece, at a postoffice. The postmaster will give you a card with spaces to stick nine ten cent savings stamps on. When you present the tenth dime he will take your card up, and make out a postal savings certificate for one dollar. He will write your name and address, and the date. If you keep that certificate a year, you could draw out one dollar and two cents. The postmaster keeps a copy of the certificate, so if you lose yours he will give you another one. To get money out, you write on the back of the certificate the amount you want to draw, and sign your name. If you have saved $10 and want to use $1, the postmaster will give you the dollar and a new certificate for $9, bearing the same date as the one he takes up.

How the Postal Banks Work

What does he do with your money? He puts it into a bank, and draws three per cent interest on it. The extra one per cent pays him for the trouble of taking care of your money. When you have saved one hundred dollars, you should draw it, after an interest date, and put it into a bank, where it will earn more money. Uncle Sam will not let you leave more than $500 with him. He does not want to go into the banking business, but to get people into the habit of saving.

How Your Uncle Trains You

Uncle Sam can tell you a lot about saving money and investing it, and how it grows. One hundred dollar boxes of candy are eaten up, and earn nothing but headaches and bad teeth. But a one hundred dollar bond, that can be turned back into cash any day, earns from two and a half to five dollars a year. It would pay for your tuition and books for a year, in a business college, or give you a start in life when you grow up. And you would have the saving habit, instead of the spending habit.

This saving habit is one of the most important things you can learn.

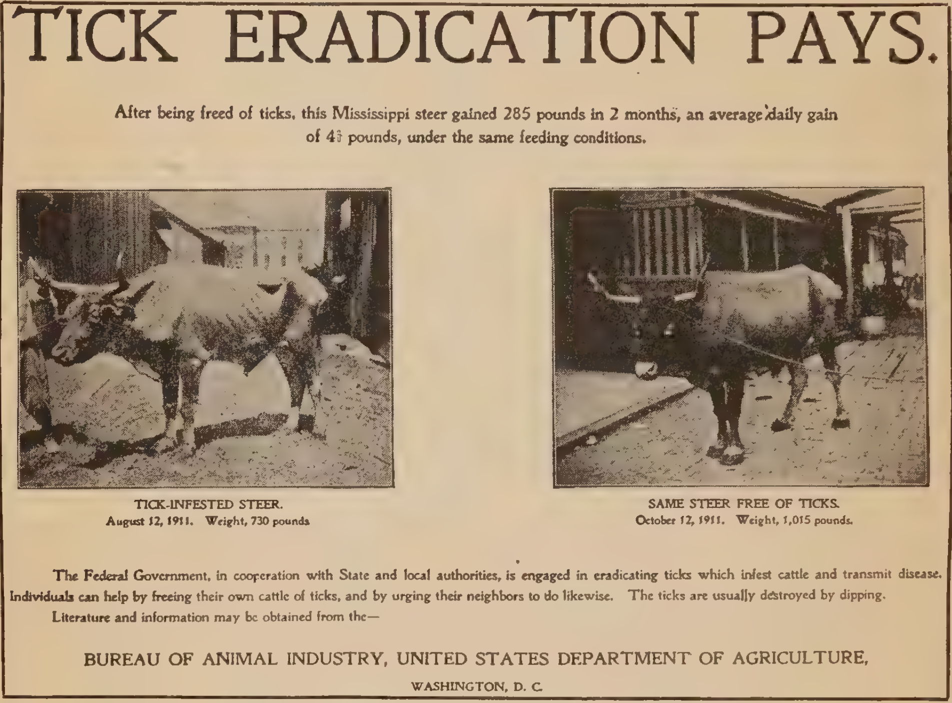
What the Government Does for the Farmer

West Wing of the U. S. Department of Agriculture Building.

NO OTHER person has so many different kinds of things to do as the farmer—and Mrs. Farmer; so many hours of work. Up at four o'clock in the morning in summer, he feeds the farm animals, milks the cows, doctors a sick horse, sprays the fruit trees to kill insects, hoes the garden, and "bugs" the potatoes. He plows and sows and reaps, cares for his machinery, hauls his crops to market, and looks at the weather reports in the postoffice. Then, when everything on four legs has gone to bed, he reads the farming papers and the crop and market reports.

A Bee Hive of Bureaus

You won't be surprised, then, to learn that one of the busiest men in the President's cabinet in Washington is the Secretary of Agriculture, who is the government farmer. Just to name the departments under him, each with its chief and hundreds of employes, makes an ordinary man's head swim. Two of them, the Weather Bureau, and the Bureau of Forestry, we have told about in separate articles. There is, besides, a Bureau of Animal Industry, a department devoted to grasses, grains, fruits, flowers, and truck gardening. The Bureau of Chemistry studies fertilizers. The Soil Survey has mapped the country, according to what each of over four hundred different soils will grow. The Bureau of Biology collects information about useful and harmful wild birds and animals. The Bureau of Entomology does the same with insects, and the Bureau of Statistics gathers and publishes reports on the condition of crops.



TICK ERADICATION PAYS.

After being freed of ticks, this Mississippi steer gained 285 pounds in 2 months, an average daily gain of 4⅔ pounds, under the same feeding conditions.

TICK-INFESTED STEER.
August 12, 1911. Weight, 730 pounds

SAME STEER FREE OF TICKS.
October 12, 1911. Weight, 1,015 pounds.

The Federal Government, in cooperation with State and local authorities, is engaged in eradicating ticks which infest cattle and transmit disease. Individuals can help by freeing their own cattle of ticks, and by urging their neighbors to do likewise. The ticks are usually destroyed by dipping.

Literature and information may be obtained from the—

BUREAU OF ANIMAL INDUSTRY, UNITED STATES DEPARTMENT OF AGRICULTURE,
WASHINGTON, D. C.

How Uncle Sam Makes the Ticks Stop Ticking

Nothing "talks" like a picture. So the Department of Agriculture—the division of it called "The Bureau of Animal Industry"—sends out posters like this into the cattle regions where cattle become infested with ticks, to teach the stock raisers how well tick-eradication pays, and how to make the ticks stop ticking! This picture tells at once the results of doing it, and the reading matter under it tells you how to get full information about tick-eradication by writing to the Bureau of Animal Industry These posters are displayed in the local postoffice and other public places.

"Unhired" Help From Washington

Any farmer can get any kind of help he needs in managing his farm. The Department of Agriculture will tell him what is the matter with any field and how to remedy it. It will send him printed bulletins of directions to cure all plant, and animal, and soil diseases. It will tell him why ichneumon flies and moles are friends. It will send him samples of seeds suited to his farm, tell him how to test and select seeds, and what other crops he could grow to make more money. In one swampy district in Maryland the government advised the farmers to breed muskrats for the fur. They did so and are now prosperous.

Vaccination to Keep Plants Healthy

Government experiment farms are conducted, often in connection with state agricultural colleges. The pupils analyze soil, test seed and fertilizers, and attack insect enemies and plant diseases. The healthiest plants are marked and the seeds saved for replanting. Strong plants are vaccinated with disease, so they won't catch it. The same attention is given to farm animals, to breed the biggest and strongest. Just as malaria and yellow fever were caused by certain mosquitoes in Panama, so investigation by Uncle Sam's great farming

An Arizona Date Orchard

As we have seen, it has been proved that dates will thrive in this country. This scene is in the hot, dry Arizona climate. The picture shows date trees three years after transplanting.

department proved a "tick" caused Texas fever in cattle. By studying the habits of Mrs. Tick, and protecting cattle from her, Texas fever is being stamped out.

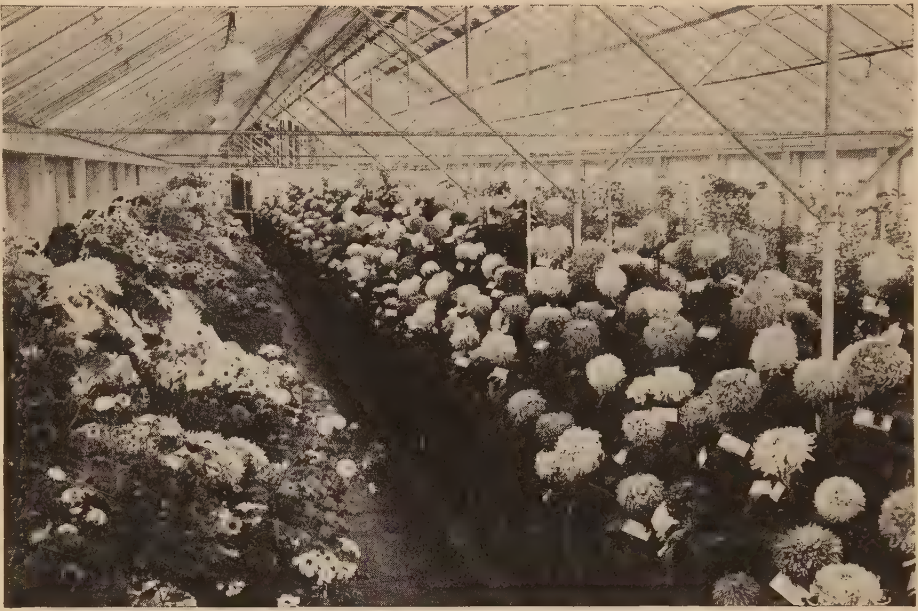
By giving plants certain foods and exposing them to heat, cold, drier and moister air, they are trained to stand new climates, so they can be grown more widely. And new seeds are brought from other countries and "naturalized." A fine rice was introduced from Japan into Louisiana; a dry-region wheat from Asia Minor; a seedless grape from Italy; the olive tree from Spain; a hardy peach tree from China, and a fig tree from Smyrna. At first the fig tree did everything it should but grow figs. To fertilize the blossoms a certain wasp, with a long honey tube, was needed. So fig wasps were brought over, too, to California.

A Bit of Egypt in California

This date palm does not seem to know it is not in Egypt, for it goes right on producing dates in California as its parent tree used to do in the Land of the Nile. It was imported by the Department of Agriculture because the experts of the "Division of Pomology" thought it ought to grow in our own beautiful "lands of Egypt," like southern California.

Any man who thinks of buying a farm, anywhere in the United States, should write to the department in

A Chrysanthemum Show

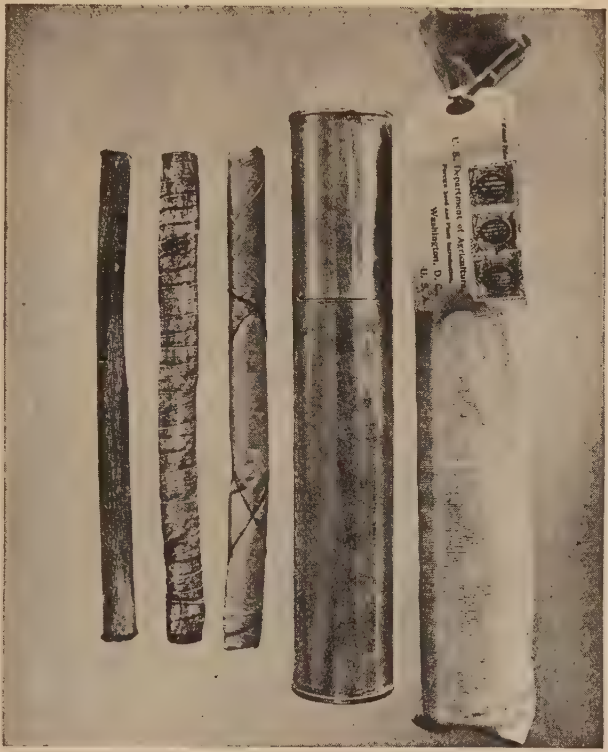


A chrysanthemum show of the Agricultural Department. Compare the development of the chrysanthemums on the right with the seedlings on the left.

Vegetable Trial Grounds

Here we are in the vegetable trial grounds of the Office of Seed and Plant Introduction. This big garden is on the flats of the Potomac. Here, experiments are made with different kinds of vegetables, and those that prove the most satisfactory have their seeds sent out for use of farmers and gardeners all over the country.

How the Date Palms Got Here



This picture shows how slips—scions, they are called—from all kinds of fruit trees are brought from different parts of the world for introduction in this country. These packages are called "mailing cases."

Washington. It will analyze the soils of the farm, give him reports of the climate, the crops and markets of the region, what fertilizers to use, and what other things of greater value he could grow.

It will tell him the rations and treatment of animals, how to run a market garden, a fruit, dairy, poultry or timber tract. It will tell him where to put his house and stable, how to dig a dry cellar, a pure water well, drain a wet field, build a silo, to "pickle" green fodder. It will tell him what machinery to buy and how to take care of it. And it will tell the farmer's wife and children many ways to lighten toil.

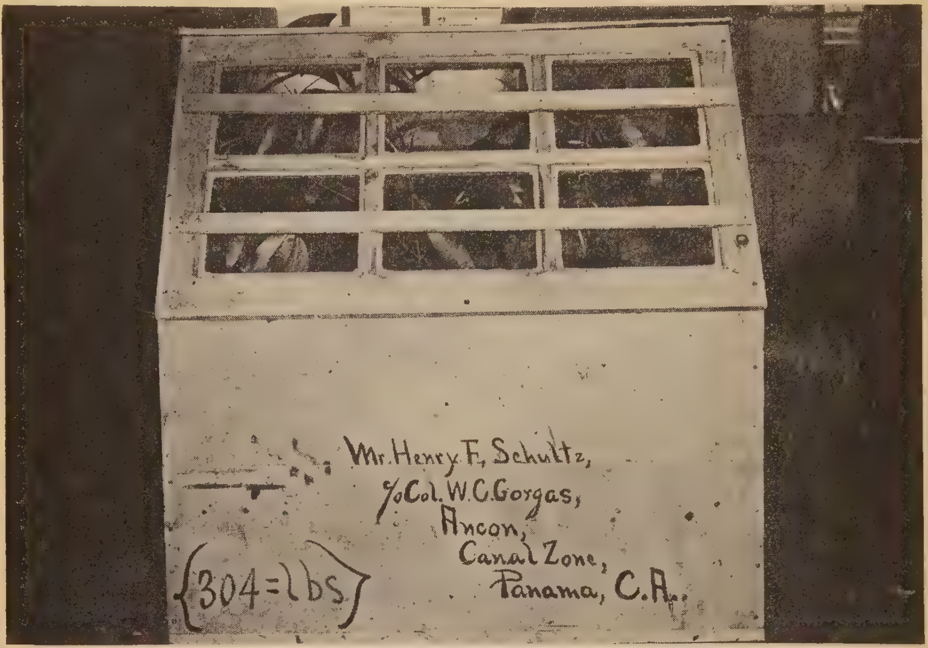
Catching the Farmer Young

Our government likes to catch its farmers young, and train them. That is because boys and girls take to new ideas quicker than older people. There are many thousands of boys in Uncle Sam's Corn Club. One boy in South Carolina is the champion corn grower of the world. In the Canning Club are thousands of girls. Farm girls are making money by canning fruits and vegetables that once went to waste.

Getting Rain When You Want It

One of the greatest things the Agricultural Department has done is to water the rainless deserts. The

How Young Plants Are Shipped



Here is one of the boxes in which plants are shipped. It is really a little house, isn't it? You see where these plants were going, don't you?

dry regions often have rich soil. With water they grow enormous crops. Often, right above them, the mountains are snow covered. But the melting snows made floods in the spring and left the land to parching suns. Only Uncle Sam had money enough to build great dams across the outlets of mountain valleys, to hold the waters back until needed, and to dig miles of irrigation ditches. Now, whenever a farmer needs rain, he opens a water gate and fills the little ditches that cross his fields with water.

The government helps the farmer at the "business" end of his business. It tells him how and when to market his crops; how to keep books, figure labor cost and interest on the value of his property. It advises him to keep separate accounts of each field and animal, so that he can tell which is making a profit and which is not. Many farmers never realized that it costs the same to till a poor field, feed a "scrub" cow, and grow a worthless apple tree, as to care for a good one, until Uncle Sam proved it to him over and over.

Everybody is glad to see all this help given to the farmer, because the more he knows and grows, the more and better foods we will all have to eat. But it is just as important that everything offered in the market should be pure and wholesome. So the Agricultural Department has a pure food bureau to inspect oyster beds, packing houses, creameries, canneries, and storage houses. Manufacturers who adulterate foods or put false labels on packages can be prosecuted in the courts.

It costs millions of dollars to run

Establishing Grades of Cotton

This is the laboratory in which official grades of cotton are prepared. Cotton of a certain quality is designated by names which are understood by the trade, such as: "Fair"; "Strict Middling Fair"; "Middling Fair"; "Strict Good Middling," etc. The trouble is that when men sell cotton to one another they may dispute, when the cotton is delivered, whether it is up to grade or not, so the government establishes grades and sends samples of these grades to the various cotton exchanges.

Uncle Sam's big farming department, and it doesn't make a penny—it gives everything away. But don't you think, like Little Orphant Annie, that it "earns its board and keep" and a good deal more?

A Pleasant Home for Beautiful Sheep

This is a scene on a government experiment farm at Middlebury, Vermont. It shows a group of Southdown sheep. On these experiment farms the government finds out about animals as well as plants, and gives the benefit of this information to the farmer and stock raiser.

Uncle Sam's Best Customers

How We "Swap" with Other Nations

BY "UNCLE SAM" you know, is meant the people of the United States. All together we are a sort of storekeeper, buying goods of other countries and selling them. We grow more wheat, corn, cotton, and other farm products, and make more oil, iron, flour, machinery, and other manufactures than we can use. And other countries have things to spare that we need. We grow no coffee or tea, but think how much we use. We do not make enough linen or silk goods, nor certain kinds of cotton and wool fabrics. All of our spices, many tropical fruits, diamonds, laces, ostrich feathers, sugar and countless other useful and beautiful things come to us from far away lands. Thousands of ships are on the oceans, carrying goods back and forth. Trains take them to and from the seaports.

You and Your Papa and Uncle Sam

A Billion Dollar Business

If your papa is a storekeeper, how much business does he do in a year, and how much money does he make? Buying and selling, Uncle Sam does a business of over several billion dollars a year. You know, if you earn a dollar and spend a dollar and five cents, you are in debt, but if you spend only ninety-five cents you have a nickel to put in your toy bank. Uncle Sam usually buys less than he sells. That is what makes ours a rich country.

Some of Our Best Customers

England buys the most from us. Before the dreadful European War she bought over $478,000,000 worth of goods in nine months, and sold us over $234,000,000. Canada bought $300,000,000, and sold us $90,000,000; Germany bought $268,000,000, and sold us just half as much; France bought $120,000,000 and sold us $113,000,000. Our next best customers were Holland, Italy, Belgium, Cuba, Japan and Mexico. As you see, in some countries we sell a great deal more than we buy. But in Brazil we bought $104,000,000 worth in the same nine months, and sold that country only $32,000,000. We spent two and a half times as much money in China, and twice as much in Cuba and Japan as those countries spent with us, and the same was true of all the countries of South America. Now that the Panama Canal is opened we are selling more in South America and Asia.

How Uncle Sam's Business Grows

Using Up Our Raw Materials

Our trade is growing larger every year. That gives railroads and ships more goods to carry. Our trade is changing, too. To feed our increasing population, and give work to more men, we have to keep more of our foodstuffs and raw materials of manufacture at home. Sixty per cent of what we sell is manufactured, only 40 per cent unprepared foods and other raw materials.

What Our Government Is Doing for the Children

© *Pacific & Atlantic*

UNTIL 1912 the government did nothing for the children.

If a cow had Texas fever, a chicken the pip, a hog cholera; if corn, wheat, potatoes or apple trees had some disease or insect enemy, Uncle Sam could tell the farmer exactly what to do about it. He even kept count of every bushel of the various grain crops and every domestic animal, and reported their market value. But of the farmer's or townman's children he kept no account and he gave the mothers no help in bringing them up. Poor baby was born to troubles, as sparks fly upward. He scrambled up or gave up the struggle with no help, without even the knowledge of good Uncle Sam.

Oh yes, he cared. But it didn't occur to him that anything more could be done about it. He just seemed to think that as every child was born with two loving parents he would be provided for properly. It was the business of each county and state to care for its own orphaned, blind, deaf and feeble-minded children. In early days, when healthy living was easier and cheaper in our country, most children did grow up naturally, into useful, happy men and women. But even then all mothers were not wise, and all fathers did not do their duty.

The Cry of the Children

And now, thousands of babies are born every year in the crowded quarters of big cities. Their parents love them, but they are poor, ignorant and helpless. The food and air of the little ones is poisoned. Their bodies and minds are stunted by too early toil in factories, mines and shops. Their innocent hearts are poisoned in alley and gutter playgrounds.

Cruel Waste of Childhood

Child offenders were judged by the same hard codes as grown-up criminals. In jails and prisons and poorhouses they mingled with adult law-breakers, paupers and the feeble-minded.

A few such people as Jane Addams and Julia C. Lathrop of Hull House, Chicago, Judge Lindsey of Denver, and Nathan Strauss and William George of New York found all these things out, and told the public.

"Do you hear the children weeping, oh my brothers,
With a sorrow not of years?
They are laying their young heads against their mothers,
And that cannot stop their tears."

Just as Mrs. Browning got the factory laws of England changed long ago by writing the poem from which this verse is taken, these social missionaries in American cities got the first pure milk depots, day nurseries, fresh air homes, public playgrounds, vacation schools, juvenile courts and better child labor laws.

Beginning of Reform

It was Miss Lathrop who, for a dozen years, insisted that this waste of childhood was Uncle Sam's business. The babies of today are the citizens of tomorrow. They must do the work, bring up the next generation, invent, discover, keep our liberties, and preserve the home. What kind of citizens was the government allowing to grow up?

Miss Lathrop knew exactly what she was talking about. As a member of the Illinois State Board of Charities for twelve years, she had visited every poorhouse, jail, factory, orphanage and institution in Illinois. She had secured the civil service law and helped Miss Addams establish the first juvenile court in the world. She insisted that every child born has a right to be registered, his food and air, education, morals and work guarded and regulated. He has a right to have his mother taught how to care for him and to have his father punished when he deserts the family.

In April, 1912, President Taft approved an act of congress creating the Bureau of Child Welfare under the Department of Commerce and Labor, in Washington. Miss Lathrop's appointment as the first chief of the bureau was widely approved.

Just what does this bureau do? It cannot make laws for the nation, state or city. Its duty is to collect and publish facts of every kind that relate to the well-being of children, and give information and advice on the best laws and methods. It studies the birth rate, death rate, the causes and prevention of children's diseases. It tells people the weight and measurements of a physically perfect child, how to tell mental and moral qualities and to correct defects. It reports the records and results of schools, institutions, juvenile courts, apprenticeships, healthful and harmful first occupations; and how to get and enforce good child labor laws and to punish those who corrupt or exploit children for profit.

In a word, Uncle Sam has gone into the business of giving the children a "square deal" and of making better and more useful citizens for the future.

How a Foreigner Becomes a Citizen

Two Little Newcomers from Holland

Hans and Gretel have arrived at Ellis Island, the gateway through which all European newcomers must pass. Gretel's one-legged dollie must be clasped tight by two chubby arms for it is very precious, and Hans is ready to defend his small fat sister most valiantly in the new strange land. America may some day be proud of this adopted son of hers who stands so staunch and scowling in his two wooden shoes.

"IN the United States you can live and work where you please. You can think and speak your mind freely. You can send your children to public schools."

Something like this is printed in newspapers, all over the world, in many strange languages. We are so used to having these blessings that we think little about them. But to many foreign people who come to America, to make new homes, they seem too good to be true. They are not here long before they learn that they can become citizens, and help manage the affairs of our great country. A newcomer sees the happy excitement and the feeling of responsibility of his neighbors over an election. His fellow workmen will tell him how he must go about it to become one of Uncle Sam's business partners. He should go before a judge and take a solemn oath that he intends to live in the United States and become a citizen. The clerk of the court writes out his declaration and gives him a copy.

First Steps Toward Citizenship

Five years after landing in this country and not less than two years after his declaration he takes his copy of the declaration into any federal court. Two citizens must go with him as witnesses. To his petition for full citizenship they must sign their names to the statement that the man has lived in the state at least a year, that he is of good character and is not an anarchist—that is, a disbeliever in all governments. He is given his "second papers" and is told to appear in court at the end of ninety days to be examined.

What the Witnesses Are For

Just from Holland

Here is the whole family for three generations—a baby, his young mother and father, and his grandmother. They are strong, clean and intelligent-looking and will probably make good citizens.

Could You Answer Such Questions?

This time he must prove that he can speak and read English, and that he understands our system of government. Questions are asked him about our history, and the government of cities, states and nation that would puzzle some of our native born voters to answer. If the judge is satisfied that he will make a good and useful citizen, a "certificate of naturalization" is made out. That is the foreigner's diploma. It makes not only the father, but the mother and the children still under age who were born abroad, citizens. Children

Children Are Citizens Too

born here are citizens whether the father is or not.

It used to be easier for a foreign born man to become a citizen. But then it was unfair to make a boy born here, of American parents, wait until he was twenty-one to vote, while aliens were allowed to vote within a year or so. Besides dishonest politicians used such voters to cheat in elections. Honest but ignorant foreigners were paid for voting as they were told. They were made to understand that vote buying was a good American custom.

Corrupt Use of the Foreign Vote

Only One Shipload of Immigrants

Most of the immigrants to this country come in the steerage of the big Atlantic liners because the fare is cheapest. This is just one shipload. It gives you some idea of how fast foreigners pour into "The Promised Land," and how important it is they should learn about our institutions.

Naturalization Night Schools

In some big cities there are now "naturalization" night schools. The pupils are men who have taken out their "first papers." They study speaking, reading and writing English, American history, the constitution and civics, or practical government. In Massachusetts, when a class of aliens is graduated, a meeting is held, with the mayor as chairman. A judge makes a speech on good citizenship, and bearded men sing: "My Country 'tis of thee" with proud hearts.

Graduating into Citizenship

One of the first things many foreign born Americans do, when they get their citizenship papers, is to pay visits to their old homes. Some of them come to us upon reaching the age when they would be obliged to serve in the standing armies of Russia, Germany, Italy and other countries. If they went back before becoming citizens of the United States, they would be arrested and punished, and then be made to serve as soldiers. But with their "naturalization" certificates, they can come

Our Consular Courts Abroad

At Ellis Island

This man has gone to sleep on a bench at Ellis Island while waiting his turn to be examined. Since people from other lands began to come to this country in such numbers, we have gained some very undesirable citizens as well as some good ones, and have become more careful about the kind of immigrants we admit. We don't want those who are diseased, insane or feeble-minded, criminals or anarchists, so all immigrants are stopped at Ellis Island, just outside of New York Harbor. There they are examined and tested, and sent back to their own country if they are found to be unfit.

and go as they please. If molested in any way, they can appeal to the nearest American consul. It is one of the duties of our consuls and ambassadors in foreign countries to protect traveling Americans in their rights, and to assist them in their troubles. When a man can say: "I am a citizen of the United States," he is treated with every consideration.

Americans who are living or traveling in other countries must, of course, obey the laws of those countries. Uncle Sam will not defend his citizens who commit crimes elsewhere. But, in very backward nations, where there are half-barbarous punishments, and imperfect means of getting justice, American consuls keep the right of judging Americans in their districts, and do not leave them to the mercy of native courts. They settle disputes of captains and crews of American merchant vessels, and they take charge of the body and property of any American who dies. If a citizen of the United States is imprisoned unjustly in any foreign land, the whole department of state is set in motion to secure his release. If necessary, Uncle Sam's soldier boys would go to his defense.

Work of the Consuls

Every boy and girl should read Edward Everett Hale's story of "The Man Without a Country," to learn just what it would mean to have no native land; to be a homeless wanderer, like poor Phillip Nolan. And then read the story of the author's ancestor, Nathan Hale,

The Man Without a Country

Schoolfellows in New York City

The upper row of boys are: James Radin—Swedish, Nicholas Vasbaro—Greek, Max Rose—German, Samuel Blickman—Russian, Chin Chung—Chinese, and Philip Adler—Scotch. The boys in the lower row are: Israel Hellman—from Austria, William Kleinberg—from Australia, Samuel Blum—from Canada, William Simon—from England, Michael Iorio—from Italy, and Philip Rotter—from Roumania.

who was captured by the British in the Revolutionary War, and hanged as a spy. His statue stands today in a crowded quarter of New York City. On the pedestal is one of the first English sentences foreigners learn. It is what this young American patriot said on the scaffold:

"I regret that I have but one life to lose for my country."

How a Big City Is Managed

IF a country boy had but one wish, wouldn't it be this, to visit a big city?

The Procession and the Policeman

A boy who is born in a city and who grows up there, never sees it as a country boy does. It's like that story of Christmas every day in the year. Even the animals in the park zoo are an old story to the city boy. But to a country boy, a city is a fresh wonder. Such a maze of tall houses and endless streets! Rivers of people, automobiles, cars. From the top of a skyscraper they look like distracted ants. But it would look rather terrifying to the boy if he wanted to cross the street.

"Want to get across, sonny?" A blue policeman, six feet high and two wide, speaks to him.

"I—I was waiting for the procession to go by."

"You'd stay there long enough to grow a gray beard." The policeman laughs like good old St. Nick. He lifts his hand, and the procession stands as stock still as grandfather's clock.

To a stranger it looks as though a city is wound up and stopped by policemen. But the officer on the crossing has his orders from the Chief of Police. The mayor appointed the chief, and got his power to appoint from the city charter. The charter was granted by the state legislature and approved by the people. The people elected the mayor. If that procession does not stop, when the policeman tells it to, disobedient ones can be arrested and taken before a judge of the city court. The law was made by the city council. Isn't that exactly like your school city, with the three departments, or wheels of governments, turning on each other and working together?

And just as in your little government, the work of the council and the courts is done in quiet rooms, out of sight. But the mayor's work of enforcing the laws is public. You run into his army of helpers everywhere.

Division of Duties in a Big City

Departments of a City's Work

On any street you may see a police patrol wagon, a fire engine, a street sweeper, a city hospital ambulance, a park water or oil sprinkler, or a school-board automobile truck. A "Measles Here" card on a door, or "No Spitting Allowed" sign in a street car, shows where a health officer has been. A wagon loaded with garbage or ashes is driven by one of the street-cleaning brigade. Then, in every elevator, a sort of diploma looking paper is neatly framed. It is the inspector's certificate of safety. Butchers' refrigerators are inspected for cleanliness. Weights and measures in stores wear the city sealer's little honesty pasters. Dogs wear license tags, and automobiles and peddlers' carts are numbered.

There are police, fire and health departments, school and library boards, park commissioners. Any boy would find a lot to interest him in the engineering department. That builds and repairs bridges, viaducts, water-works and harbor improvements. There is a building bureau, a water bureau, a bureau of streets, a bureau of sewers, a board of examiners of stationary engineers and plumbers. Nearly every department issues licenses and permits of some sort. Ignorant people could endanger others and damage property, in many occupations. Every engineer, plumber, chauffeur, operator of a moving picture machine, bridge tender, seller of fireworks and oils, and many others must have licenses. And special permits must be got to hold parades, put up circus tents, build a house, and lay a sidewalk.

Handling the City's Money

To carry on the business of a large city takes millions of dollars every year. In a family, father earns and collects the money, and mother may be treasurer for the household. The city gets its money from taxes, licenses, permits, inspectors' fees, water charges and court fines. All money goes first to the city collector. He gives it to the city treasurer who puts it in banks, and sends receipts for money paid out to the city comptroller, or bookkeeper. The comptroller and treasurer sign checks, or city warrants, for all money paid out. That is how the policeman gets his salary.

Work of the Law Department

A city has a lot of work for lawyers to do. There is a corporation counsel to draw up bills properly for the law-makers, and to advise every department in disputed questions. The prosecuting attorney is really a state officer. He sees that criminals are punished in the local courts, but under the state laws. The city attorney defends the city against damage suits.

The City Hall is a big building, several stories high, and often covering a block of ground. Sometimes the courts have a separate building. In the City Hall is the council chamber with its committee rooms, the mayor's office, the offices of various chiefs and boards. Some departments take a whole floor. With several thousand schoolteachers and more policemen, you can imagine that the city's employes would make a good-sized town. People having business with the city, come and go all day at this City Hall.

Work That Never Stops

Even when you are in bed, the patrolman's footsteps by your door, the measured toll of the fire alarm, and the clamor of horses and engines, remind you that the city government never sleeps. By a telephone call you could get a policeman, a fire company, or a hospital ambulance any hour of the night A park squirrel in its bark house in an oak tree, or a bird on its nest in the shrubbery could get help, too. No one is allowed to hurt these little creatures. It is the duty of park policemen to see to that.

A Little City in a School

This picture shows an Indian reservation school in which a pupil government is being organized. One of the boys is reading aloud the constitution, upon which the other fathers of this new republic will vote, section by section. The self-government idea makes a strong appeal to our young red brothers.

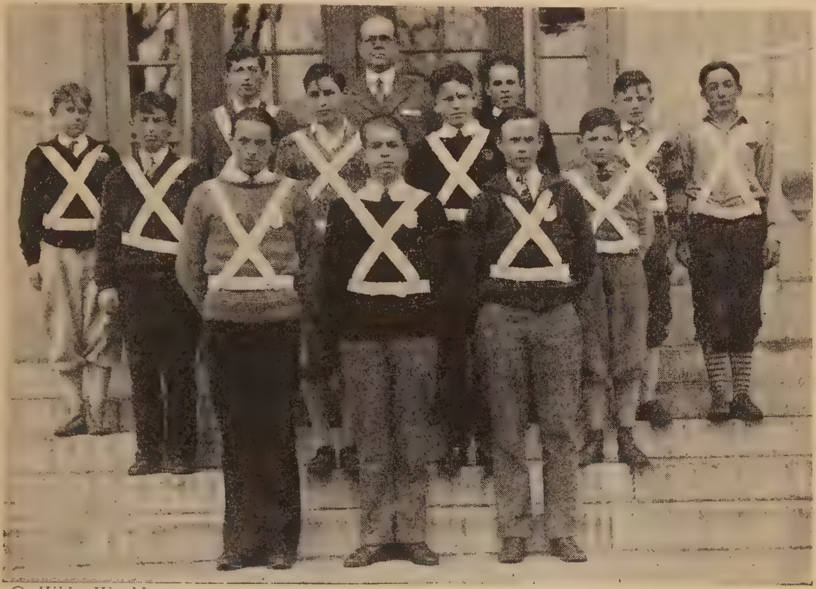
THERE is one story that is in every school history. It is the story of the Charter Oak. The charter was a written permission from the King of England, for the people of the Connecticut Colony to govern themselves. Afterwards the king changed his mind. He sent a royal governor to rule the colony. But the charter was safely hidden in a hollow oak tree in Hartford. The governor went away in a great rage, and the colony continued to govern itself.

City charters are given today by the legislatures of the states. If you want to form a school city the first thing to do is to hold a mass meeting, and get up a petition to the principal, asking for a charter. It should be signed by as many as possible of the upper grade pupils, who would become citizens. The principal may want

The Granting of the Charter

you to go to the superintendent. Read the article on "The Children's Club." It will tell you how to get things started, and then how to carry on your government properly.

Student Traffic Officers



© *Wide World*

This picture shows a group of student traffic officers in one of the new junior high schools in Boston. This corps of officers selected by their principal supervise conduct during the movement of classes, quell loud talking and boisterousness. Naturally the boys who compose the group must maintain perfect deportment themselves, which is excellent training in self-discipline.

A committee on the charter should present the petition, and tell the principal or superintendent why they want self-government, and why they think they can keep order and get the school work done properly. Do not complain if your charter is limited to one term, at first. Remember, you are on trial and may fail. But won't you work to show that you can be trusted!

Planning the Form of Government

You should first write out the kind of charter you want. By studying the United States Constitution in the back of your school history, upper grade pupils could put it in proper form. It should state: first, the name of the proposed city; second, its purpose; third, what powers the city is to have; fourth, who are to be citizens. In our real government a young man cannot vote until he is twenty-one, nor hold important offices until he is older. The pupils of the three higher grades should be full citizens. Those of the Fourth and Fifth Grades could have the right of applying to the court for citizenship papers. But before admission to citizenship they should be examined in reading and writing and tell what they understand about the charter. Pupils in the "baby" grades are minors. They must obey the laws, but must be protected from bullies on the playgrounds, from dangers at street crossings, and be helped in other ways. Fifth, your constitution should name the offices to be filled, times of elections, and duties and terms of officers should be stated. The principal looks the charter over, and perhaps suggests some changes. When the charter is signed it is adopted by the vote of citizens at a mass meeting.

A Trial in School

CUERPO DE POLICIA

Of course, school is full of trials—we all know that—but this is a court trial. The scene is in a school in Cuba where they have pupil self-government. The culprit looks very sorry and the jury looks as if it would not be severe. But the law must be obeyed! Notice the banner, "Cuerpo de Policia." That is the way they say "chief of police" in Spanish.

Exactly as in a real city, state, or nation, the government of a school city is divided into a legislative, or law-making department; a judicial, or law-judging department, and an executive, or law-enforcing department. In a city the council, or board of aldermen, makes the laws.

The Wards and the Town Councils

To elect a council the city must be divided into wards. There should be a ward for each class. Each ward elects a member to represent it in the council. The mayor and judges are elected by popular vote of all the citizens. The mayor presides over the council meetings but has no vote. Any citizen may attend a council meeting, but can take no part in the debate. He should watch the member from his ward, however, and see that he is doing his duty. When the council passes a law it should be signed by the mayor. A copy is written out by the clerk and sent to the court. Judges must know the laws and the penalty for breaking them, so that they can settle disputes and punish law breakers. The mayor appoints policemen and health officers, to help him enforce the laws. Guardians of younger children are appointed by the court.

Laws to Be Enacted and Obeyed

A school city should have laws forbidding fighting, bad language, bullying younger children, truancy and tardiness; sauciness to teachers; the marking of buildings, sidewalks and fences and littering of the school grounds or streets with rubbish; personal untidiness and rude manners. There should be, for a truant officer, a boy who is big, kind, and firm enough to go out and arrest those who "play hookey." The culprit should be brought before the court which sits every day at three-thirty.

This Comes of "Playing Hookey"

Here a little truant has been arrested by one of the school city policemen. The boys on either side of the doorway seem to be enjoying it. It's all good-natured, of course, but experience shows that when boys themselves start out to stop truancy they do it. This is a scene in a New York City school.

"Stand up, prisoner," says one of the judges severely, although she may be a dimpled girl. "You are charged with playing truant. Are you guilty?"

"Y-yes ma'am."

The Judge Passes Sentence

"What a dreadful thing to be an idler and shirker. Do you want to grow up that way? Idlers are no credit to this school, and you interfere with the work of other pupils and of teacher. You are sentenced to stay in your seat for two days at recess, and think it over. I am sorry to say it, but if there are any more complaints about you, you must have a guardian to call for you and see that you come to school."

The sentence is written out and signed by the judges, and the truant officer takes it to the boy's teacher. That boy finds public opinion against him. If he wants to have a good time in that school he must mend his ways.

If a boy or girl comes to school unwashed and uncombed, with dusty shoes or without a necktie, a health officer is after him. A tardy pupil is shamed out of his loitering by having a guardian. A bully is hustled from the playground by a squad of police, and made to stay away until he promises to behave. A pupil who falls below a certain standard of conduct and scholarship may be deprived of his citizenship. This is fair, for one who cannot govern himself must be governed by others. Our big United States does not allow a tramp, a criminal or a pauper to vote. But it is seldom necessary to be as severe as that

Plenty of Work for Citizens

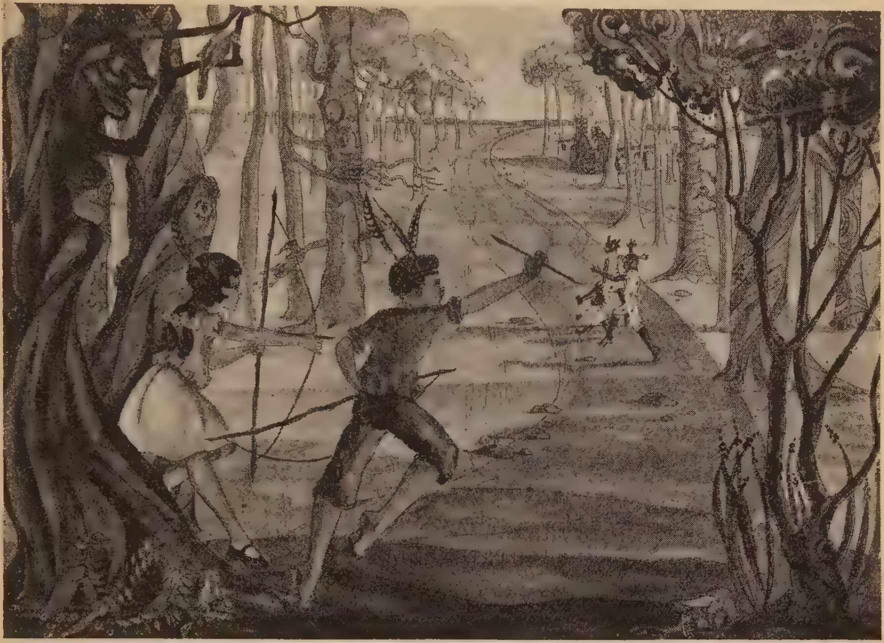
Helping One Another

But you must not think that all the business of pupil government is the punishing of offenders. As you know, a real city provides parks and playgrounds, and policemen to help children and old people over bad crossings. So, in the school, the big boys and girls protect the little ones, and teach them new plays. They tie neckties, hair ribbons and shoe strings, loosened in play; they scrub grubby little faces and hands. Each room tries to see which can keep its wards the cleanest. There are ink-well, coat closet and blackboard squads to help the teacher. If a pupil is puzzled about arithmetic, the teacher asks for an older pupil from another room to help him after school hours. Everyone is ambitious to be among the best and most helpful citizens. An election comes around every term, and any one may be chosen mayor, a judge or councilman, or be appointed a police or health officer.

When this story was read to a Seventh Grade girl in a city school, she said: "Any school children who could do all that would have to be 'angels bright and fair.'"

Wasn't she surprised to learn that one of the most successful pupil cities is in a big building on the lower East Side of New York? The little citizens are poor Italian immigrants, who come from crowded tenements. Don't you think they will understand how to be big citizens when they grow up?

A Great Student of Government



When a small boy in Georgia, Tommy Wilson often played Indian with his cousin, Jessie, along the wooded roadside near the negro settlements.

EVERY boy loves to play Indian, and that means every great American no doubt has at some time in his life dressed in Indian costume and imagined himself living the life of a wild savage.

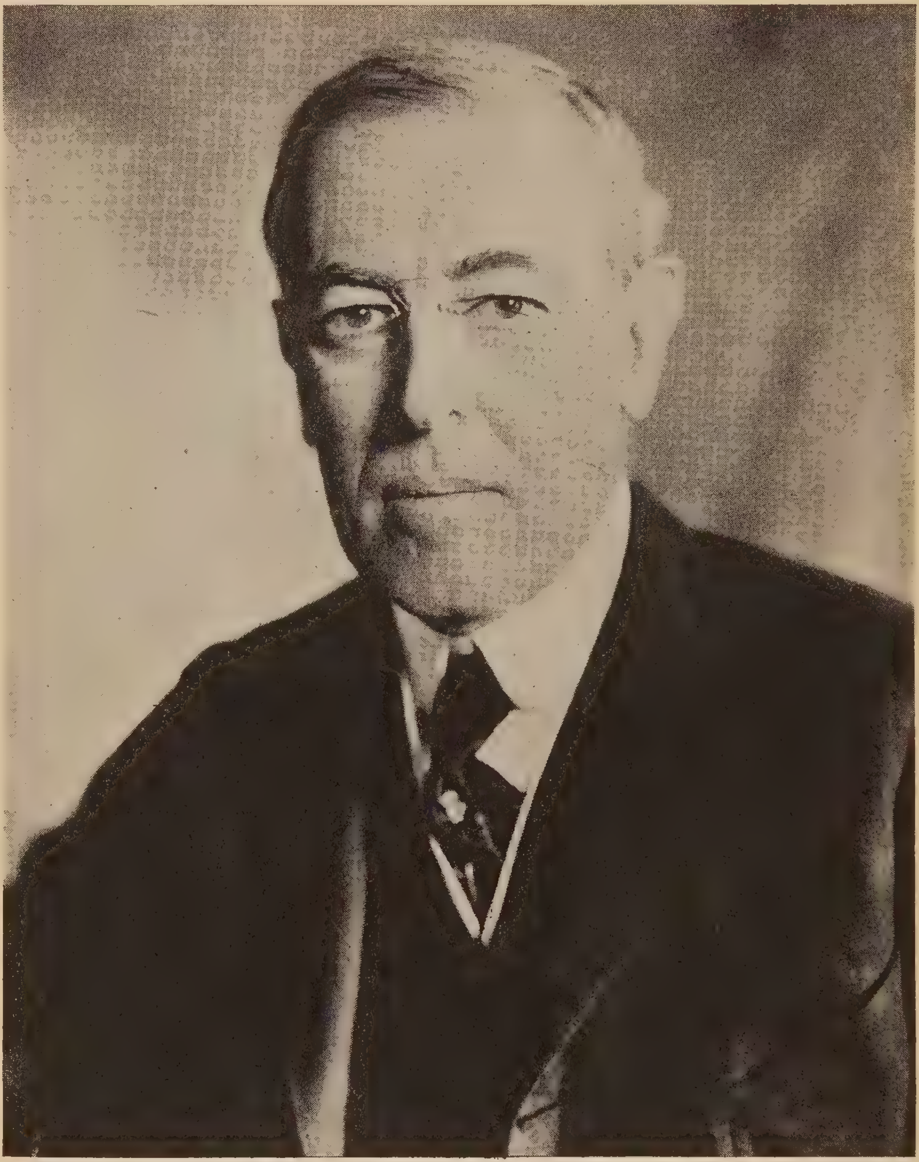
A Real Boy

When you read in your history how Woodrow Wilson was once the leader of all the world, it is hard to imagine him a little boy playing Indian and base ball; yet that is just what he used to do. "Tommy," as he was called, was a real boy, more interested in games than anything else. He loved to go to the "Sand Hills," the home of his Aunt Marian, near Augusta, Georgia, and play Indian with his cousin, Jessie. They would stain their legs, faces and arms with poke berry juice and wear a head dress of feathers. Then, armed with bows and arrows, they would go to a lonely road leading from Augusta to a negro settlement near by, where they would wait until the darkies passed. When one came by they would dash out with war whoops.

His Ancestors Were Great Leaders

Tommy was born on December 28th, 1856, in Staunton, Virginia, in a Presbyterian manse, for his father was a very noted Presbyterian minister. It was his privilege to be born into a fine old family of great leaders, and his ancestors were men of education and culture who

The War President Who Gave His Life for Peace



Never has our nation faced a great crisis but that an able leader came forth. For the Revolutionary War it was Washington, for the Civil War Lincoln, and for the World War Woodrow Wilson, whose responsibility it was to lead the most peace loving nation on earth into the greatest war of all history. But, to Wilson also was given a vision of World Peace, and, true to his character, once he had a vision of duty, he let nothing, not even certainty of death itself, turn him aside.

Once when a cabinet member suggested he stop work and play golf, Wilson replied, "My boss won't let me." "Your boss," began the friend, wondering who could be the boss of the President of the United States. "I have a conscience that is my boss," said the President. "It drives me to the task and will not let me accept the tempting invitation."

Woodrow Wilson, as his picture shows, was a man of very unusual intelligence, culture and determination. Though born an aristocrat, democracy was the passion and keynote of his life.

had played prominent parts in the history of our country.

Ministers move often, so when Tommy was two years old, his parents moved to Augusta, where as he grew up, Tommy Wilson became the leader of the neighborhood boys. Their favorite meeting place was the parsonage barn and the lot around it. Here Tommy organized a club which he called the "Lightfoot" club, the purpose of it being the practice of base ball and the playing of match games with other boys in the city. In the meetings they were very careful to use parliamentary law always, and every one of the boys knew what a "previous question" was.

The "Lightfoot" Club

Among other things Tommy enjoyed were horseback riding and his bicycle. He is said to have been the first boy who ever rode or owned a bicycle in North Carolina. He rode the bicycle very calmly, utterly indifferent to the great astonishment he was causing.

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The Presbyterian Manse in Staunton, Virginia, where Woodrow Wilson was born.

His Family Life

There was a great deal of reading aloud in the Wilson family and Tommy never forgot the thrill of the Scott and Dickens stories he heard at the age of eight. He was sent to the best city schools, but his real teacher was always his father. His mother gave him tenderness and affection, but it was his father who taught him to think clearly and express himself well. The Reverend Wilson had once been a teacher of rhetoric, and every Sunday afternoon was devoted to drilling Tommy in putting his thoughts into the fewest, most expressive words. No doubt Tommy longed to be out doors and thought he was having a very hard time, but it was a wonderful preparation for his famous speeches and books that came later.

Father His Real Teacher

On Mondays the father would take Tommy on some excursion in the city or neighboring country. He showed and explained to him the principles of all kinds of machinery, wonders of nature and many other things.

When Tommy was fourteen, his family moved from Augusta to Columbia, South Carolina, and here for many months, Tommy imagined he was Admiral of the Navy, and wrote daily reports to the Navy Department. While Admiral he discovered and destroyed a nest of pirates in the South Pacific ocean. At this time he began reading Cooper's sea stories, and learned all about ships, although he had never seen one in his life.

A Leader at Princeton

At the age of nineteen Tommy Wilson entered Princeton University and from the very first, was a leader in his class. Although he had the manners and speech of a young aristocrat, at heart, he was strongly democratic even then, and the more he thought and studied the more democratic he became. He was not influenced in the least by money or social position.

Chooses His Life Work

Like every other boy, Tommy Wilson liked some of his classes better than others. He was especially interested in public speaking, history, government and politics. By the time he had been in Princeton three months, he knew definitely that his life work must be along the line of government that promoted the welfare of the people. He early realized that in order to do this, he must not only be a good writer but a good speaker, and he took every opportunity to improve himself along these lines. As a result, he was soon recognized as one of the leading and most outstanding debaters in school, but he was so sincere and concientious that he could never be persuaded to debate a question in which he did not believe.

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This is Woodrow Wilson at the time he was Governor of New Jersey, standing on the front porch of his summer home at Sea Girt.

He did not read just what his course called for, but everything he could find on the subject of government. He so distinguished himself that before he had graduated, he was known as an authority and expert on government and had had an essay on government published in one of our best magazines.

His friends say that Tommy abounded in good humor and good fellowship and was loved by all. While serious at times, he was a normal boy, full of life and interested in everything going on. He was always dignified in public, but full of wit and sometimes given to "monkey-shines" in private.

Studies Law at University of Virginia

After graduating at Princeton, Wilson entered the University of Virginia law school, where, as usual, he was recognized as a leader. This University had a very high standard of scholarship and many social activities, all of which Wilson seemed to enjoy thoroughly. He played base ball, joined a fraternity (there were none at Princeton) the choir and Glee Club. He was very popular as an orator and in great demand at student activities. This description is given of him at that time, "He was tall and lanky, correct in dress, deeply religious, but not so goody-goody; very reserved behind a pair of eye glasses that were always worn."

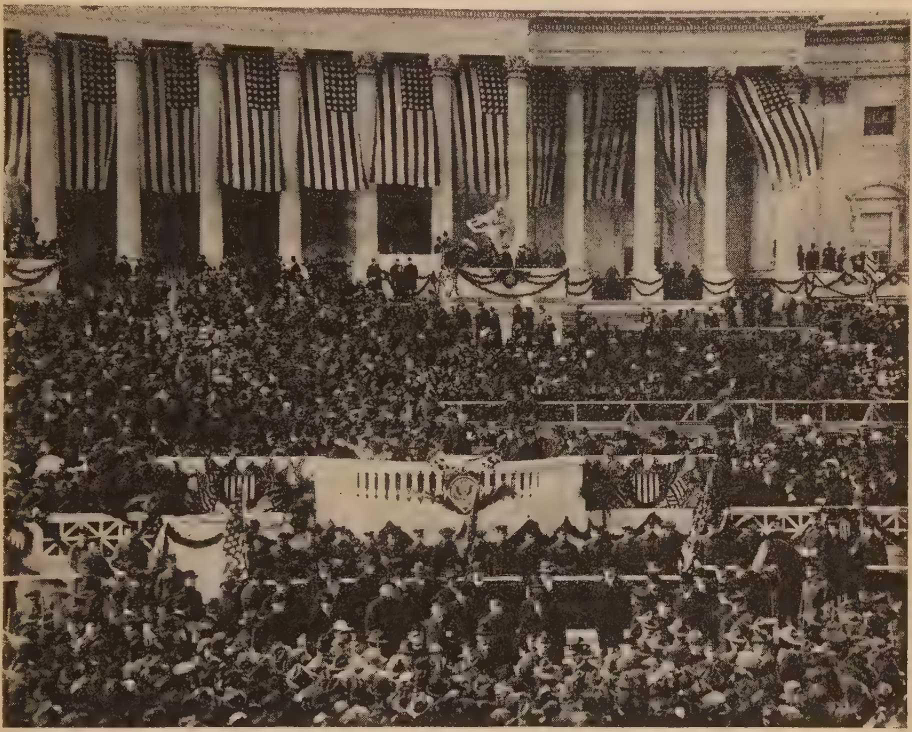
A Successful Teacher and Writer

When he was graduated from the University of Virginia law school, Wilson's first thought was to practice law, and he located in Atlanta; but he soon decided that by writing and teaching he could better realize his ideals and have a larger part in the public life of the nation. These were interesting years during which he married Miss Ellen Axson, taught and wrote a number of splendid books on history and politics. Whatever he did, he did well; taking great pride in doing the best that he could, so it is no wonder his classes were always the most popular in school. It was not because his courses were easy, but because he made them so interesting. When he taught at Princeton his classes were more popular than any ever given before or since. He not only knew his facts, but how to express them clearly, originally and forcefully. He never spoke that he did not say something worth hearing. He was such an outstanding man that when a new President had to be selected for Princeton University, he was the most natural and logical choice.

A Most Popular Teacher

Tools That Build a Successful Life

The life of Woodrow Wilson can best be understood by boys and girls if they think of it in terms of building a house. Every child who has either built small houses, or has watched the building of large ones, knows that there must first be a definite plan and that each part must be built well if the whole is a success. Wilson first planned his life and so thoroughly prepared himself for each thing he did that it not only served as a foundation and support for the next thing, but led him firmly step by step toward the top.



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Woodrow Wilson is delivering his second inaugural address on March 4, 1917, from a specially built platform on the steps of the Capitol. If you look real closely you will be able to distinguish the late Ex-President Taft seated on the platform at the extreme left.

All the time Wilson was building the house of his life, he was using the right tools, just as any carpenter must use to build a splendid house and just as all boys and girls must use if they are to build successful lives. What do you suppose these tools were? Wilson once said that the tools a leader should possess are:

Force of character,
Readiness of resources,
Clearness of vision,
Grasp of intellect,
Courage of conviction,
Earnestness of purpose,
Instinct and capacity for leadership.

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Here is the late President Wilson and his cabinet. How many famous men can you recognize in the picture; Of course, the first one will be the late William Jennings Bryan, the "Great Commoner," who sits on the president's right.

Democracy the Keynote of Wilson's Life

The older he grew, the more ardently Wilson believed in real democracy until it became the spindle around which the whole wheel of his life revolved. He did not have a good opportunity to put these beliefs into practice until he became President of Princeton, a school for rich men's sons. Then he immediately began such democratic reforms that the whole country took notice of him and marveled. Wilson was never lacking in strong convictions and the courage to practice them. When he felt that a thing was right, he was not influenced by people who tried to change him. He realized that he could not please everybody and that the only thing to do was to do the right as he saw it, after thinking it over and being convinced it was right. Because of this quality he received many criticisms, but had he been more easily influenced, perhaps his place in history would not be as brilliant and enduring.

Elected Governor of New Jersey

Wilson made such a reputation as a fearless leader and reformer while President of Princeton that he was asked to run for Governor of New Jersey. One can imagine how surprised he was because he was not a politician and did not approve of the "political bosses" who usually helped elect the governors and state officials. He would have nothing to do with these bosses, but believing the people needed and were ready for a change from that kind of rule and that he could help them, he consented to run for Governor. He promised them some reforms they needed badly and when they elected him, he did not stop until he had kept every promise—something almost unheard of before. It is largely due to his efforts that New Jersey today has the most progressive laws along many lines of any state in the Union.

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The late President Wilson with Mrs. Wilson on a visit to Boston. You will recognize Calvin Coolidge, then Governor of Massachusetts, who himself became President a few years later.

Elected President

From the time he began his Democratic reforms in Princeton University, the people of the United States had been watching Woodrow Wilson. After his successful career as Governor of New Jersey, they felt he was ready to be President of the United States. He had proved himself and they felt he was well prepared. Thus, in 1912, he was duly nominated and elected our twenty-eighth President.

"Let the People In"

"Let the people in," said Wilson, at his inauguration when a place was roped off to keep them out. It was his first command as President and continued to be his chief thought.

There has never been a period in history when more splendid laws for the welfare of the people were enacted in a similar length of time. Wilson did not merely suggest these laws, but worked hard to get them passed, because he believed that the President should be a real leader. He worked for the people's interests against those of the "privileged" or money class. A few of the laws he urged were for the betterment of labor, sanitation and pure food.

America Enters the World War

During President Wilson's second term, America reached the point where she could not honorably keep out of the war going on in Europe, so, after doing everything he could to prevent it, he was obliged to see her enter. It was a critical time when the fate of the whole world seemed to hang in the balance.

Without Selfish Motive

With the thoroughness with which he did everything else, Wilson prepared for war—a war without a selfish motive, to "make the world safe for democracy." In twelve months America enlisted, trained and sent over seas about two million men, the most remarkable movement of troops that ever had taken place in that length of time in all history. In about four months after the Americans reached Europe the Germans were beaten.

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"THE BIG FOUR"

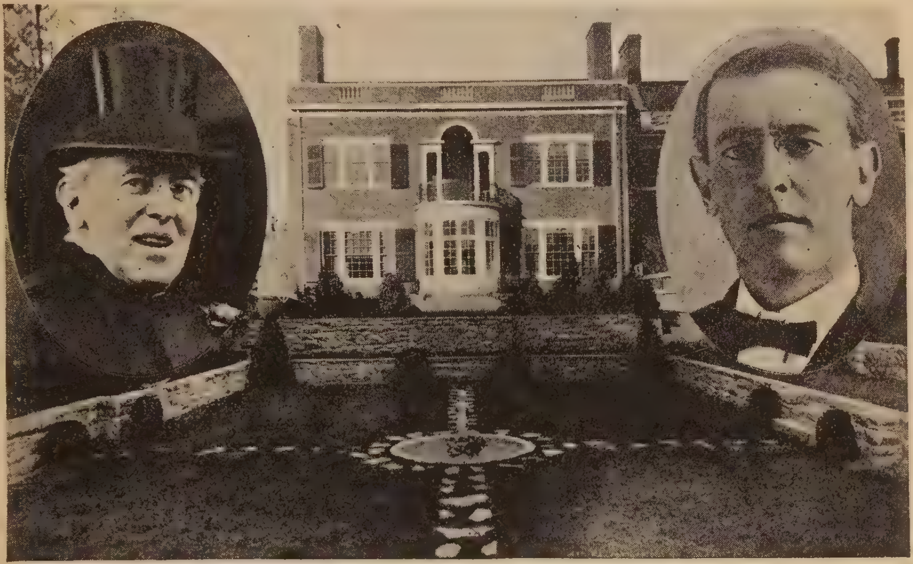
These four statesmen, Premier Orlando of Italy, Premier Lloyd George of England, Premier Clemenceau, the "Tiger" of France, and President Woodrow Wilson, were known as the "Big Four" in connection with the League of Nations.

Plans for Permanent Peace

During all of this time, Wilson was not only a real Commander-in-Chief of the Army and Navy, but he was, also, planning a lasting peace. He realized what the whole world is realizing now, that no one can really win a war when they have to lose the lives of their brave boys. His greatest ambition was to keep it from ever happening again. He believed if all the nations of the world signed an agreement known as the "League of Nations," it would prevent any more terrible wars. He had thought out a plan, and in order to accomplish it, did what no American president had ever done before—went to Europe. He was severely criticised for doing it, but when he felt he was right, Wilson did not mind criticism.

The Hope of the People of Europe

In Europe, President Wilson was hailed by the people as they had hailed no other man in centuries. Their hopes were on him, for he alone, out of all the great men of the world gathered in Paris, wanted equal justice to everyone and had no selfish motive. He believed in the brotherhood of man, and in the smallest nations having as much right as the greatest. It took him months of hard work to get the countries of Europe who were thinking more of themselves to see things as he did. Some of them never did, and he was not able to get in quite all of his high moral ideals; but in the main things, they finally agreed and signed Wilson's "League of Nations" to avert wars.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After leaving the White House, Woodrow Wilson spent a great deal of his time in the lovely garden of his home on S Street in Washington. The small picture at the right was taken when Mr. Wilson was a professor at Princeton; the one at the left was taken just before his death.

America Rejects the League of Nations

How happy Wilson was to bring that signed document home to America! He held high hopes of it being signed because he had great faith in the American people, but he soon saw that Congress was not in favor of it. Then he determined to go on a speaking tour of the country and appeal to the people. He was not strong enough to make this trip, and his physician and friends advised him against it, but he said he would gladly die if by doing so he could help the cause of peace. He felt the mass of people did not understand the League and he wanted to explain it to them himself. He told them that the central idea of the League was that nations do not consist of their governments, but of their people. It was the first time in history this had ever been the leading idea of an international Congress.

Wilson Appeals to the People

"The War's Greatest Casualty"

It can truly be said that he gave his life for permanent peace, and while he did not live to see the United States take any definite steps toward procuring it, he was not discouraged, for he felt the time when she would do so was only delayed and later would come.

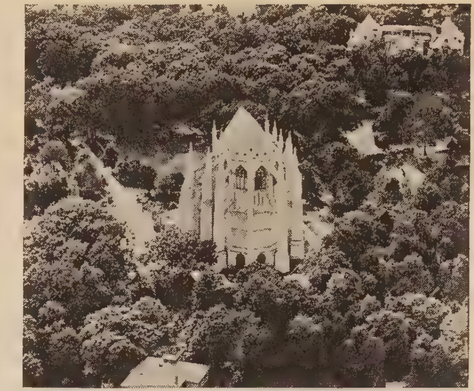
While on his speaking trip, Wilson was taken very ill and had to return at once to Washington where he was an invalid until his death, three years later.

His last words, which were characteristic of his entire life, were, "I am ready."

Character Summary

Boys and girls who read the life of Woodrow Wilson want to know what he did to make himself such a great leader, and how he developed his strong character. He possessed certain qualities in common with all great men of history, and the writer has tried to emphasize these.

He came from a home where there were good books. His parents read aloud to him, and as soon as he was old enough he read for himself. Aside from the influence of his parents, good books did more than anything else to mould his life.



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An airplane view of the beautiful Cathedral in Washington, which is to America what Westminster Abbey is to England and Les Invalides is to France.

© *Harris & Ewing*

Woodrow Wilson was the first president to be buried in the Cathedral, where the body of Admiral Dewey also lies.

The nave of the Washington Cathedral showing flags of the Allies decorating the last resting place of the War President.

Wilson enjoyed biography especially. He read the lives of famous men and often acted them out. It was due to his reading on government and the lives of certain great English statesmen that he decided to make government his life work.

Reading good books not only inspired Wilson and made him ambitious, but he learned many other qualities that are necessary to make a success of life.

He early learned that he must be thorough—a thing worth doing was worth doing well. Because he made .a success of each thing he did, he was always prepared for something bigger.

Democracy in Schools

Various elements of the laboratory method of training in citizenship have been used by isolated teachers, for hundreds of years. These elements were for the first time assembled, used systematically, and persistently advocated and developed for use in all schools, to raise the level of civilization throughout the world, in 1897, in New York City.

There were then organized eleven hundred children from five to fifteen years of age as citizens of a democratic government, in the form of a city with a school city charter. They elected a mayor, president and members of a city council, a judge and minor officers in these three divisions of government. The mayor appointed health, police and other officers, whose appointments were confirmed by the council, which consisted of girls and boys, one of each from each room.

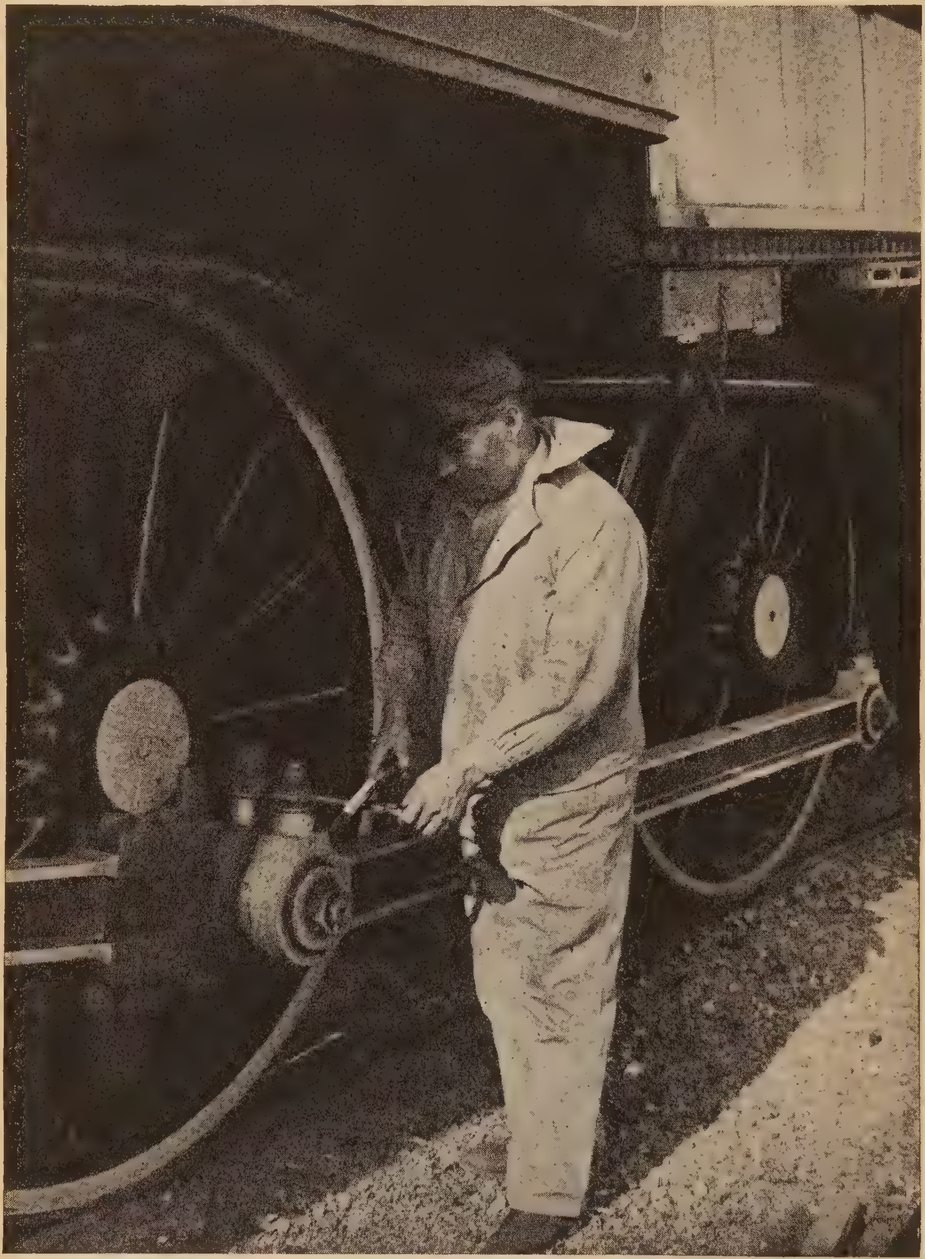
They made laws and performed the various functions of citizenship and government, under the instructions of the principal of the school, who was not a part of this republic, but teacher, guide and friend, encouraging the citizens to think and act independently and in co-operation for the defense and development of their personal and collective rights and duties. Every act of the republic was subject to his approval. He did not relinquish any part of his authority, but a new authority—that of the children—was established, which co-operated with him for every good purpose, strengthened his authority and broadened his view as well as the view of the pupils.

When the principal died, or for any other reason was replaced by another principal who did not appreciate the method, it was dropped. To meet this defect, schools are organized as a village, town or city, the teacher having the same relations to the schoolroom government as the principal had to the school republic for the entire school. The whole body of children in the schoolroom may act as their legislative body, and this is better than for them to elect a representative legislative council. If the teacher fails to maintain her teaching standards, the children's interest ceases. It is the same in teaching the practice of citizenship. For this and other reasons every state legislature should include the teaching of correct practices of citizenship in its list of compulsory subjects. Every scrap and crumb of responsibility in the school and community that can be handed over to the pupils as citizens or officers should be conserved for this moral, civic, educational purpose. It should be recognized that the use of the Golden Rule, in all of the affairs of life, personal and public, is necessary for the full success of any democracy, and that fully ninety-nine per cent of all normal boys and girls are essentially good, even if some of them by their environment have become wrongfully mischievous or even dishonest. Any reasonable appeal to them to take up the responsibilities of citizenship will be responded to earnestly, but the teacher must help them to maintain their interest, as I have already said.

Several schoolroom governments may form a state. And several states, a school federal government. This method has been promoted by the United States government and by the governments of several other countries, and is used by schools in constantly increasing numbers in our own and other countries.

Wilson L. Gill

Caring for His Iron Horse



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"The engineer 'must really love his iron horse,' and see that it is cared for. After a fast run his engine is as tired as he. It must be cooled, cleaned, oiled, and rested in its stall in a roundhouse."

The Driver of the Iron Horse

"Tested in thousands of midnight battles, always in front, on the firing line, the engineer of the 'limited' is one of the great heroes of peace."

EVERY little boy thinks he would like to do something exciting and dangerous when he grows up. He wants to be a trapeze performer, an animal trainer, a balloonist or birdman. At least *most* boys do. Don't you? He wants to be the engineer on the "limited."

Oh, *I* know; *I* know a boy who used to do it. Every day, when the "flier" *"toot-too-toos!"* a warning from the crossing, he used to rush to the station to see the train thunder by, the engineer's head out of the cab window, the fireman throwing coal under the boiler, and the bell clanging!

How You Climb into the Engineer's Cab

The Engineer's Hard Training for Work

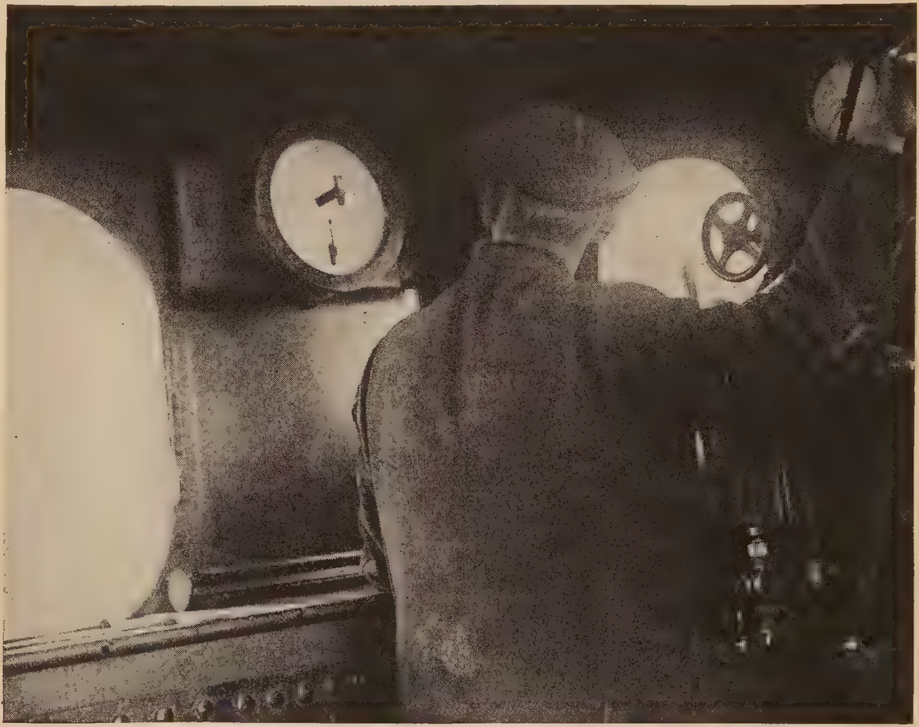
You would like to be that engineer? Let's see if you would It isn't all "peaches and cream"—this being an engineer. It takes a man of long training; one who has climbed slowly up by work and study from the position of helper in the roundhouse. It takes a man who can keep his mind, his eyes, ears, nose, and hands "on the job" for hours at a time; one who can think and act as quickly as a boy in a match game of baseball.

To be such an engineer you would have to give up a lot of things. The driver of the night express must sleep when other people are awake, and often away from home. He must not drink liquor, for railroads have found out that drinking men cannot be trusted with engines. He must love his iron horse, and see that it is cared for. Engineers love their engines as if they were alive.

And the Iron Horse Gets Tired!

After a fast run his engine is as tired as he. It must be cooled, cleaned, oiled, and rested in its stall in a roundhouse, and then be properly watered and coaled. Trusting no one else, he goes about with torch and oil can, filling the cups and polishing the brass work of his snorting steed. Climbing to the cab he tests the air-brakes.

In the Engineer's Cab



"You know how still an engineer stands at his post. One hand grips the throttle, the other is above the air-brake. He looks at the steam gage, then out of the window. He slows the train to round a curve, opens the throttle to climb a grade, shrieks a warning before every turn and crossing; watches for semaphore lights at stations and switches."

"Fs-s-s-sss!" goes the air. The air-brakes are the hard bits to pull the fastest train up standing in a quarter of a minute. The train is off on the second, with its sleeping, dining, and chair cars filled with travelers, and its mail and express cars filled with valuable property. Hundreds of lives are in the care of the man whose hand is on the throttle.

Until the train is out of the station yards there is a confusion of red and green signals and glaring headlights, plumes of steam and smoke and caverns of black shadows. Up in a tower, a towerman pulls levers and guides the train through a tangle of switches, standing engines, and cars. Such a noise of bells, whistles, hisses, clatters, crashes—like artillery on a battlefield! Then the "limited" is out in the open country, rocking a mile-a-minute over a slender ribbon of steel rails.

Clear the Track

"At night, with the one huge eye of his iron horse, the engineer can see the track ahead almost as well as in the daylight. Imagine yourself with the engineer on a night run. This is how the track would look ahead of you. That streaming light falls in the track from above you, as you sit in the cab and look out. Those little streamers hanging from the projecting arm to warn brakemen, who may happened to be on top of a freight car, that the train is about to run under something, and they must get down."

Steady! Look Out Mr. Engineer

You know how still an engineer stands at his post. One hand grips the throttle, the other is above the air-brake. He looks at the steam gage, then out of the window. He slows the train to round a curve; opens the throttle to climb a grade; shrieks a warning before every town and crossing; watches for the semaphore and switch lights at stations. Around double curves, over rocking bridges, along rails glazed with ice and heaped with snow, in wind and rain and fog, darkness and blinding storm he must "make time."

Any minute he may face death. A loose spike, a spread or cracked rail, a landslide or washout, a bridge weakened by flood, an open switch, a wrong or mistaken signal, a lost minute or an accident to another train, may cause a terrible wreck.

But He Never Thinks of His Own Life

Often he might save his own life by jumping, but the engineer sticks to his post. The work is a severe strain, but the pay is high. For those with cool heads and steady nerves it is attractive and there are men still in the service at seventy years of age. Tested in thousands of midnight battles, always in front, on the firing line, the engineer of the "limited" is one of the great heroes of peace.

The Spring Walk

These simple verses, as will be seen, are not written in model English but they are interesting, not only because of the picture they give of the attractions of a country walk, but because they were written by a Scotch basket maker who learned to read and write in order that he might express himself about the things in Nature that so appealed to him.

We had a pleasant walk to-day,
Over the meadows and far away,
Across the bridge by the water-mill,
By the woodside, and up the hill;
And if you listen to what I say,
I'll tell you what we saw to-day.

Amid a hedge, where the first leaves
Were peeping from their sheaths so shy,
We saw four eggs within a nest,
And they were blue as the summer's sky.

An elder-branch dipp'd in the brook,
We wondered why it moved, and found
A silken hair'd, smooth water rat
Nibbling and swimming round and round.

Where daisies open'd to the sun,
In a broad meadow, green and white,
The lambs were racing eagerly—
We never saw a prettier sight.

We saw upon the shady banks
Long rows of golden flowers shine,
And first mistook for buttercups
The star-shaped yellow celandine.

Anemones and primroses,
And the blue violets of spring,
We found whilst listening by a hedge
To hear a merry ploughman sing.

And from the earth the plough turned up
There came a sweet refreshing smell,
Such as the lily of the vale
Sends forth from many a woodland dell.

We saw the yellow wallflower wave
Upon a mouldering castle wall.
And then we watched the busy rooks
Among the ancient elm-trees tall.

And leaning from the old stone bridge,
Below we saw our shadows lie,
And through the gloomy arches watch'd
The swift and fearless swallows fly.

We heard the speckle-breasted lark
As it sang somewhere out of sight,
And we tried to find it, but the sky
Was fil'd with clouds of dazzling light.

We saw young rabbits near the wood,
And heard a pheasant's wing go "whir";
And then we saw a squirrel leap
From an old oak-tree to a fir.

We came back by the village fields
A pleasant walk it was across 'em,
For all behind the houses lay
The orchards red and white with blossom.

Were I to tell you all we saw,
I'm sure that it would take me hours;
For the whole landscape was alive
With bees, and birds, and buds, and flowers.

THOMAS MILLER

The Structural Iron Worker

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An Iron Worker's Bird's-Eye View of New York City.

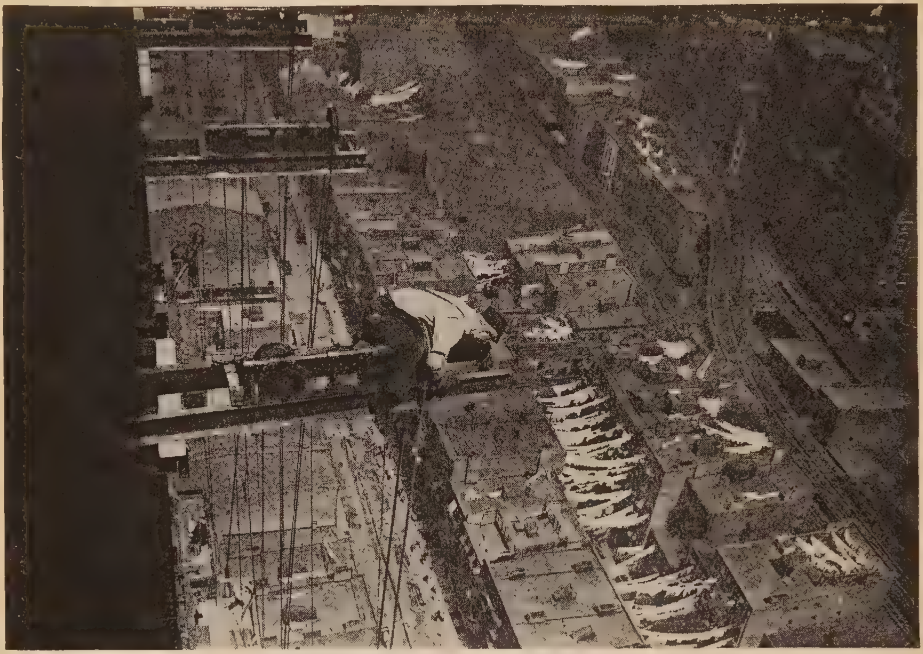
Dizzy Work at Dizzy Heights

ONE of the greatest pieces of work to be seen in a city is the putting up of the steel skeleton of a skyscraper. Just as great a sight is the building of a high steel bridge across a river, or a mountain gorge. People stop in crowds to watch girders and beams that weigh tons being lifted four hundred feet in the air. Often a workman rides on the foot-wide iron "timber" that seesaws in the air and swings in slow circles. He holds lightly to the lifting chain with one hand. As he nears the top he waves signals to men on the dizzy iron spider web. They pull on guide ropes and swing the clanging monster to its lofty bed.

Building and the Builders

The skyscraper deserves to rank among the greatest engineering achievements of mankind. The "cloud-capped towers" which were merely a poetic dream with Shakespeare have become a reality and it has been well said that since the Egyptians built the pyramids, nothing so astonishing, so daring in conception and execution has been raised by the hand of man as these giant buildings of our great cities.

The Skyscrapers and the Tenements



You often see these magnificent office palaces going up alongside the most squalid tenements. The ground which is so valuable for business buildings for that very reason becomes undesirable for residences, and so the old rows of tenements are allowed to stand and are rented to the poor until it is desired to clear the land for some big building like that on which this man is at work.

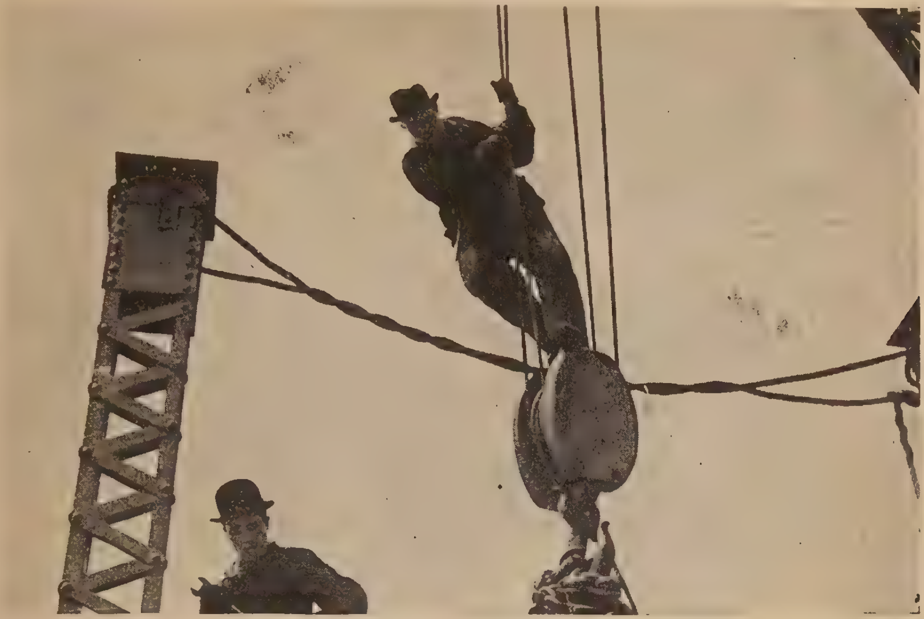
"To France is conceded the palm in modern architecture," said a distinguished Frenchman as he looked out over New York City from the tower of the Singer Building shown in our first illustration, "but France must yield to America in architectural engineering. What gigantic structures and yet you build these great edifices of steel more rapidly than we build cottages of wood."

Since the possibility of such buildings was first conceived, a special school of architects and architectural engineers has developed, and everything down to the minutest details is planned before the foundation is begun. As soon as the plans are completed, orders are sent to the steel mills, the beams are rolled and punched and in part riveted, blocks of stone for the foundation are ordered from the quarries, brick and terra cotta baked for the outer shell of the building and floors, and within an incredibly short time after the material arrives, a building of fifteen, twenty, twenty-five or more stories springs up as if by magic.

But with all the brains and skill that have been applied to the skyscraper, no one has yet thought of a device or invented machinery that will do away with the perils to which men must daily expose themselves in putting the building together; and the wonder of the building as an engineering achievement is less than the wonder of the skill and daring of the builders.

The life of the structural iron worker is one of constant danger. He must climb up and down crisscrossed iron shapes, at all angles,

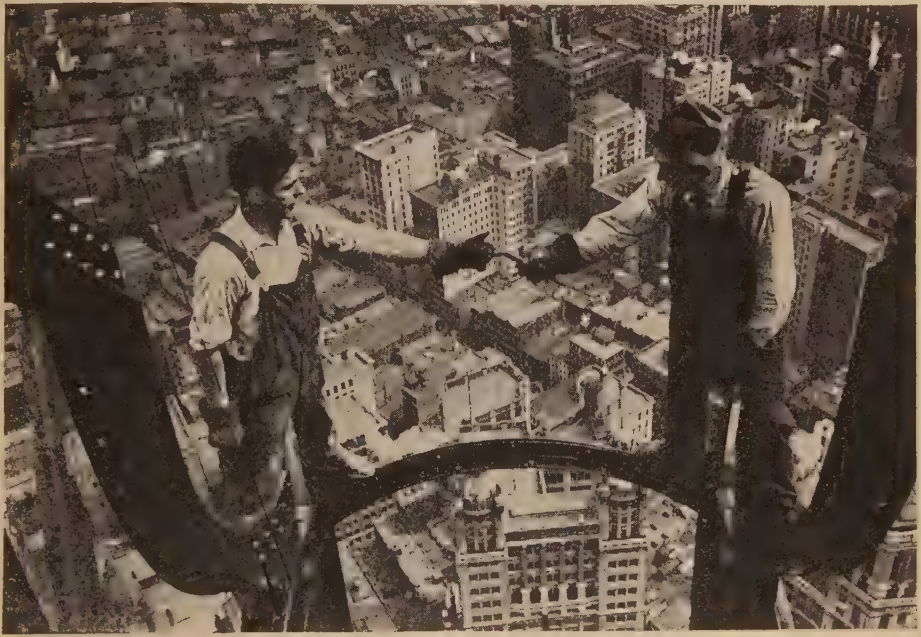
Riding on the Pulley Block



Photos by Brown Bros.

"He must ride girders, pull guide lines, hitch the loads along to balance them and lower pulley blocks."

Passing the Monkey-Wrench



A man clambering about in these skeletons of buildings that are to be, frequently has occasion to borrow tools from a fellow workman. "Jack, let's have your monkey-wrench," says Bill; as you might say to a chum, "just let me have your knife a minute."

Matching the Girders

This picture shows two workmen matching girders; that is, getting them ready to fasten together. While one of them holds the girder in place, the other drops a "pin"—as the iron workers' long handled steel bar is called—into the rivet hole to hold it. When the ends of the girder are properly adjusted, a bolt is driven into each end until the riveters appear on the job.

Sure of Foot and Clear of Head

walk beams from 3½ to 6 inches wide and 30 feet long, like a tight rope walker. He must ride girders, pull guide lines, hitch loads along to balance them, and lower pulley blocks. Workmen swarm all over the dizzy tower. Away up so high that they look like dolls, painters perch on scaffolding; riveters and scrapers straddle beams; smiths heat rivets on tiny platforms and toss them up twenty feet into riveter's iron buckets. You can hear the ring of hammers, the hiss of steam, the crash of steel, the *brrr-rr-rr!* of the compressed air riveters, for all the world like so many giant woodpeckers. And you can see men scrambling up and down like acrobats, eating their lunches and smoking pipes in their airy arbors.

Many of these iron workers were sailors and used to climbing masts, but many began in machine shops, and are just such men as your village blacksmith. They are in danger all the time and they know it. A misstep, a sudden noise or silence, a gust of wind, a crack to catch the foot, an inch of ice and one may lose his footing. Some loose bit of iron is always falling. A shed is built over the sidewalk below to protect passersby, but the workman has no protection. A workman above him may upset a keg of rivets, or drop a bolt, plate or hammer. There is no moment when a shot may not fall from the sky.

Very few men can do this work, and it is not always the big, strong men who have the steadiest nerves. A coal heaver may turn sick as death and hurry down again; a pale

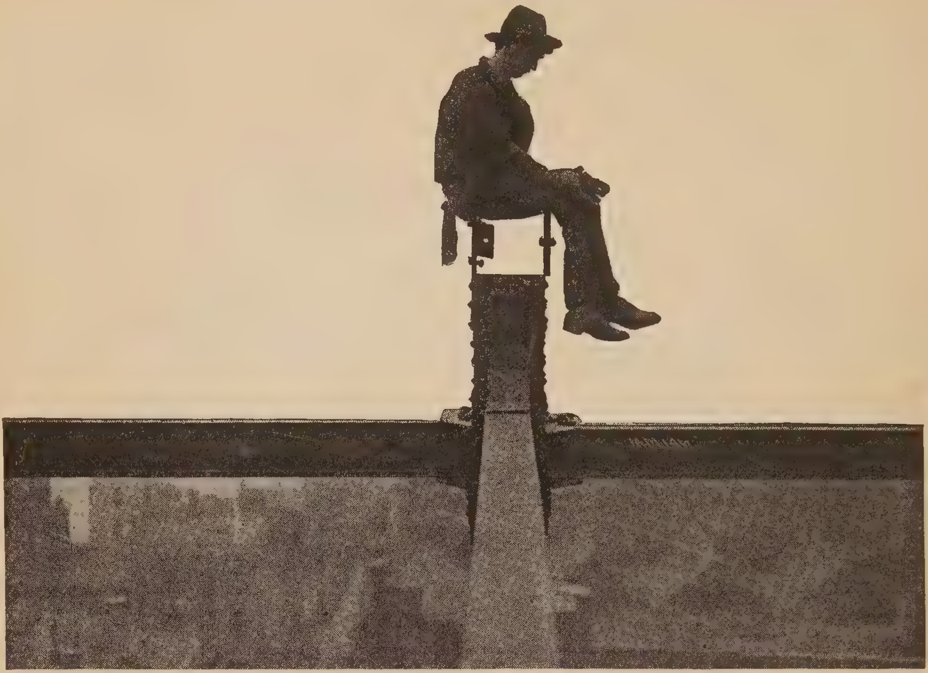
"Plenty of Ground in the Sky"

"There's plenty of ground in the sky!" said the architectural engineers who first proposed skyscrapers. The phrase was so convincing and the business value of the idea has been so fully demonstrated that capital is readily secured for such building enterprises. But if you were either of these two men setting up the steel frame-work for the windows of an office building in New York City, you would think there was precious little ground in the sky, and that the nearest ground to your feet was dreadfully far away.

Like An Ancient Battering Ram

Here some bridge builders are working what may be called a "ready made" hammer for driving into place a part of the Blackwell's Island Bridge, New York City.

Just a Few Moments to Rest



No matter how tired you were it isn't likely you would choose such a perch on which to rest, is it? This man is waiting for the next piece of steel to be hoisted up.

Where the Iron Workers Come From

little printer or tailor go about jauntily. Many follow the trade for the big wages, are always afraid, but they have the grit to stick. It is like that story of Lord Nelson. As a thirteen-year-old "middy" in the British navy he was ordered up the main mast, which is like a rocking flagpole. Asked if he was afraid to go, he answered, with chattering teeth: "Ye-e-es Sir! But I'm going up!"

Greater than these lofty buildings and bridges, with their steel skeletons bolted together, is the spirit of the brave men who raise them to such dizzy heights. There are many dangerous tasks that men are afraid to do, but they "go up."

Lighthouses and Their Keepers

The Voice of the Siren

OF course, when there is such a fog that you can hardly see your hand before you, as frequently happens on the sea coast, the signal from a lighthouse or light ship would be of no use. At such times trumpets like those in our first picture call out to the ships to steer clear of the dangerous shores near which these signals are located. These fog signals are called "sirens." That seems a queer name, doesn't it, when we recall that in the myth stories, "sirens" were the cruel sea nymphs who lured mariners to the rocks by their beautiful singing. Ulysses, you remember, escaped them by filling the ears of his sailors with wax and having himself tied to the mast. While the sirens sang beautifully but acted very badly, the fog sirens are just the other way; they do a beautiful service but they make a queer noise. This is how Kipling describes it in "Many Inventions": "From the land the song resembles the bellowing of a brazen bull; but off shore they understand and the steamers grunt gratefully in answer."

Mr. Kipling is here describing the fog signal at the lighthouse of St. Cecelia-Under-the-Cliff. It has the most powerful light on the south coast of England, and also a powerful fog signal, for it guards a very foggy coast.

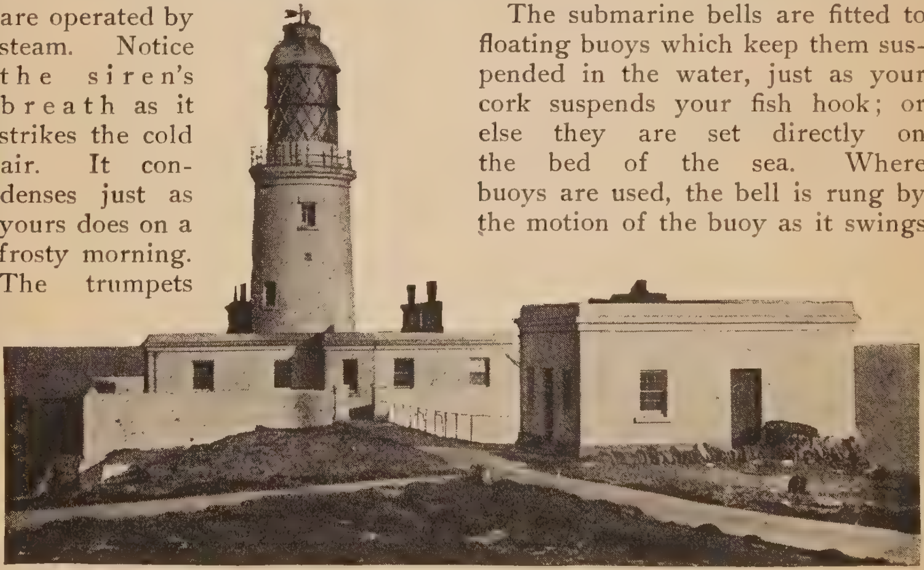
The "breath" with which these sirens call out their kindly warning is often real breath, just like yours; that is to say, air which is compressed by engines in the plant. Other sirens, like that shown here, are operated by steam. Notice the siren's breath as it strikes the cold air. It condenses just as yours does on a frosty morning. The trumpets are curved down to prevent sand drifting into them. Other kinds of fog signals employed are whistles, reed trumpets, bells rung in the air and bells rung under the sea. These fog bells are very large affairs, some of them weighing 4,000 pounds. The hammers of the land bells are driven by a weight and clock work.

But When the Winds Are Bitter—!

Cleaning the lantern of a lighthouse on a pleasant day like this when you can work in your shirt sleeves is a light occupation compared to what it is in the winter time when the lights become coated with ice, as you will see.

Work of the Bell Buoys

The submarine bells are fitted to floating buoys which keep them suspended in the water, just as your cork suspends your fish hook; or else they are set directly on the bed of the sea. Where buoys are used, the bell is rung by the motion of the buoy as it swings



The Round Island Light Plant

This picture shows you the whole plant of the lighthouse where you have just seen the man cleaning the lantern. It is called the "Round Island Light" and stands on one of the Scilly Isles off the coast of England.

The Eye of the Lighthouse

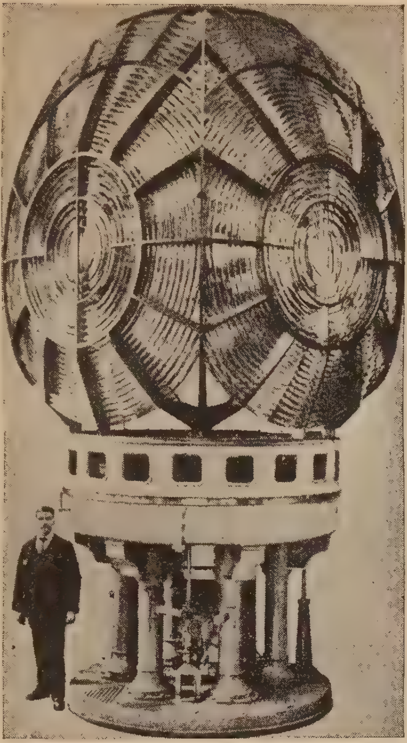
back and forth with the waves. Those on the bottom of the sea are rung by electric current carried by a cable from the shore.

But only ships that have "ears" can hear these submarine signals; that is to say, the ships must have a kind of a telephone in them below the water line and connected with the metal plating of the hull. Through this plating the sound vibrates after it has been transmitted from the bell through the water. If you have ever held your head under water while some other boy at a distance knocked two stones together, you know how much better sound carries under water than in the air. These submarine bells can be heard at a distance of fifteen miles by properly equipped vessels.

The Ancient Beacon Lights

The sirens and the bells are a modern invention, but ever since men began to go down to the sea in ships there have been lighthouses. Even before the building of the famous lighthouse at Alexandria on the Island of Pharos, which was one of the Seven Wonders of the World, there were light towers along the Lower Nile and it was part of the religious duty of the priests of Egypt to tend their beacon fires.

For centuries men did not devise anything to take the place of these beacon fires. As late as the seventeenth, yes, and the eighteenth century, grated braziers holding fires of coal and wood warned the sailors off dangerous rocks, or guided their way along the coasts of Europe and America. Beacon Island, near Boston, gets its name from a lighthouse built nearly three centuries ago, which was a beacon for sailors in times of peace, and a watch tower and signal station in times of war.

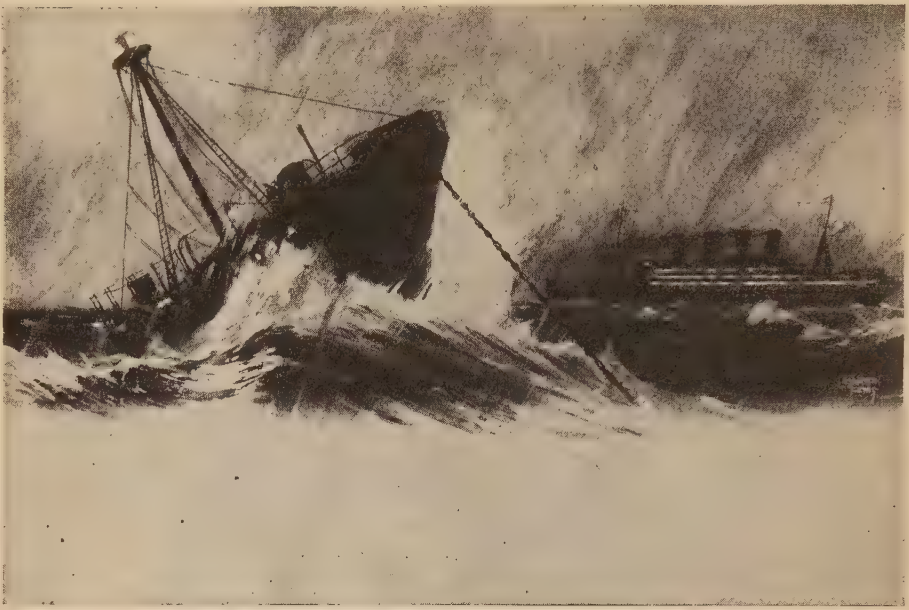


Doesn't that look like the eye of some great insect, with its many facets? It's the lens of a great lighthouse light and inside of it is the light. While the great glass as a whole is called a "lens," those ridges on its surface are the lenses. They gather the light rays and concentrate them into a great beam of light which is thrown out upon the water. You will notice also that the whole affair rests on a kind of turntable. This is because the lens keeps revolving constantly so that the light is thrown out in a series of flashes. This is done so that it will not be confused with other lights on the shore. The machinery as it turns makes a rumbling noise that has been compared to the humming of a bluebottle fly under a glass tumbler. (Of course it would have to be a very big bluebottle fly and a very big tumbler.)

Uncle Sam's Great Lighthouse System

The need for lighthouses has grown, of course, with the spread of civilization and the growth of commerce. Their maintenance is one of the most important functions

To Save Her Sister Ships



This picture shows a light ship in a storm. You can see in what a dangerous place it is; for there is a shoal where the vessel is anchored by that chain. This vessel is lighted by electricity. In lighthouses electricity is not used on account of the expense, since lighthouses are in isolated places and would require an electric plant of their own, which would be too expensive for the amount of light required. But where the water is too deep, or there are other reasons why a lighthouse cannot be erected, light vessels are used. They also have the advantage that they can be moored in different places as needed.

of government, and their construction and equipment one of the most interesting and important features of modern engineering. The United States has lighthouses along 48,000 miles of its coasts that front the sea, 4,000 miles of the shores of the Great Lakes, and 5,000 miles of rivers. This, you will see, if you stop to figure it, is twice the circumference of the earth. It is the most extensive lighthouse service in the world.

Lighthouses are broadly divided into two classes: those on land, where waves cannot reach them; and those on lonely little islands, on isolated rocks and shoals and other situations exposed to the blows of the waves. These lighthouses that breast the sea are called "wave-swept towers," and their construction calls for as much fine courage as does the life of the sailors which these wave-swept towers are intended to protect.

The Building of a Lighthouse

If you should watch from an adjoining shore cliff the first steps in the building of a lighthouse on some dangerous rock off the coast, you would first see a few men—often not more than two or three, because there is no more room on the rock—scraping off the seaweed. (Seaweed will grow, even on these storm-beaten rocks. It cares nothing for the blows of waves, provided they don't throw stones.) The men do not scrape off all the seaweed, for while they are drilling the rock for a foundation, the wind is apt to rise and tremendous waves dash over them. Then they throw themselves flat, grip the seaweed, hold their breaths until the wave has passed and get up and go to work again. This is only what these brave men would call "ordinary weather." On some coasts the weather is so wild that men can work at all only at long intervals. On one lighthouse, work was only possible for 30 hours in a whole year. Such lighthouses, you may imagine, go up very slowly.

Lighting the Light on a Light Ship

Not all light ships are lighted by electricity. Here is one that uses oil so that it is necessary for a man to light it every night as you do the oil lamp at home.

The Life of the Brave Keepers

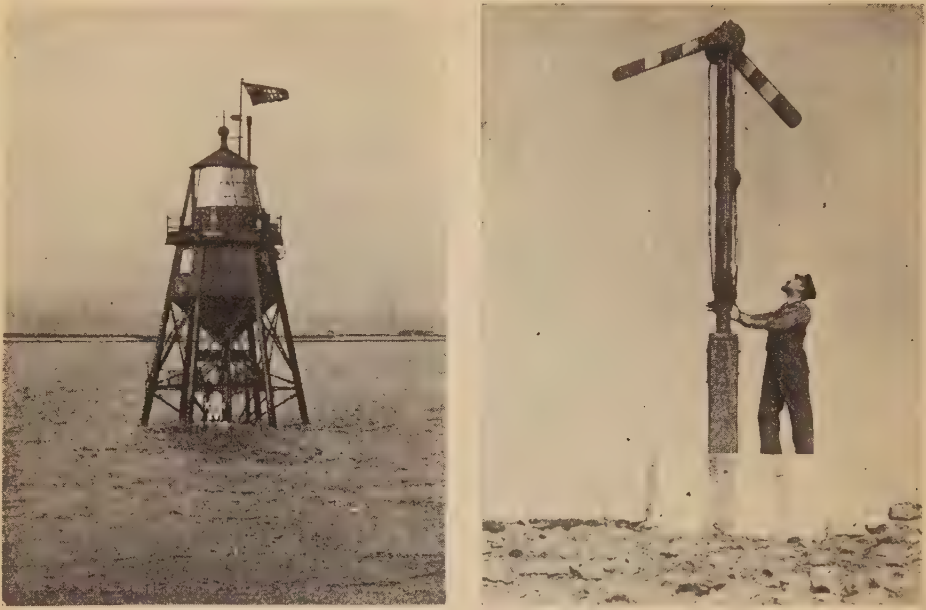
At all important stations there are from two to five keepers. At lighthouses on routes of less traffic there may be only one keeper, and sometimes one keeper to several lights. The pay is not

The Light Ship at "Seven Stones"

SEVEN-STONES

Here is a light ship which is located off the coast of England at a point known as "The Seven Stones," from seven dangerous rocks in the vicinity.

A Lighthouse in the Thames

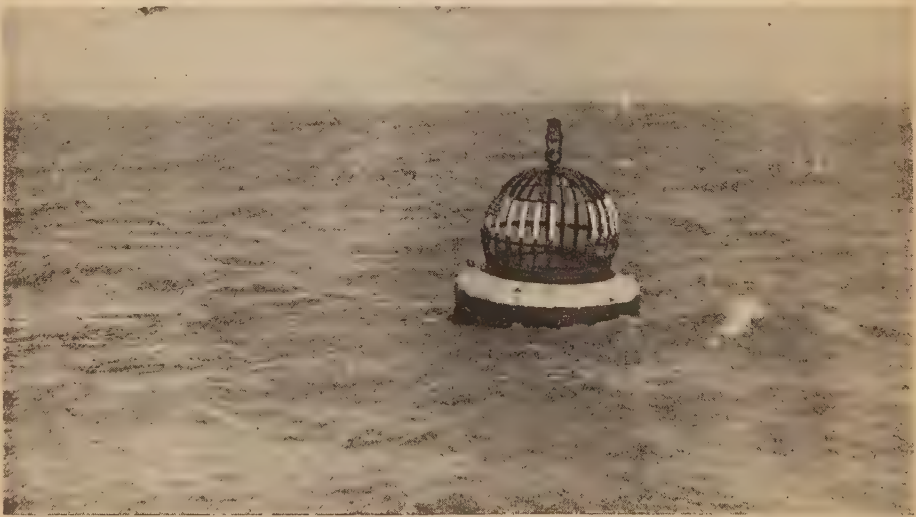


The Thames, which is the great waterway to London, is the busiest river in the world, and this is one of the lighthouses that guide ships into port.

On the right is a lighthouse keeper on the Scilly Isles, operating a semaphore signal in conversation with an approaching vessel.

large and you don't have any company but the sea gulls and the winds, and the chant and thunder of the waves. At the most distant light, on the coast of Alaska, for instance (it looks dreadfully

A Gas-Lighted Buoy in the Thames



This is another one of the devices for the guidance of ships up and down the Thames—a buoy lighted by gas.

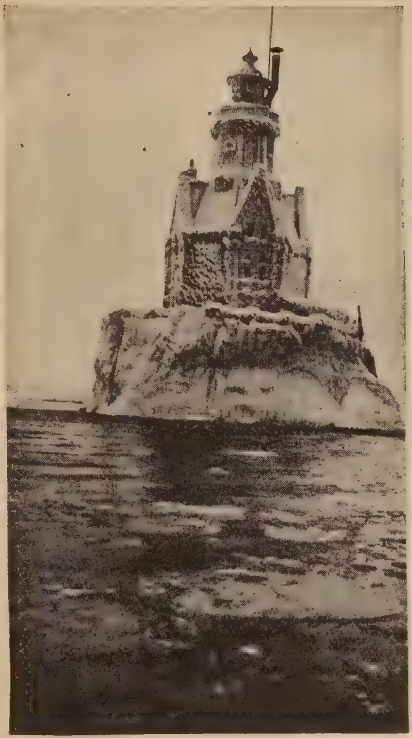
lonesome even on the map!) it is sometimes five months between mails and the nearest neighbor is a trapper ten miles away. The records at Washington show that the keeper of the lighthouse near the mouth of the Columbia River has been absent only two days in twenty-three years, and one of these absences was for the purpose of getting himself a wife. Don't you think she was a brave woman?

Yes, and there are women lighthouse keepers, too; and like the faithful men who guard these dangerous and lonesome coasts, they take great risks and endure great hardships to do their duty. One of these women is the keeper of the Angel Island lighthouse on San Francisco Bay. There is also a fog signal at this lighthouse and once when the machinery that sounds the warning bell was out of order, she struck it by hand for 20 hours, standing all night on the platform outside until the fog lifted.

In her brief official report of it to the government—it was only four words long—she said, "the fog was dense."

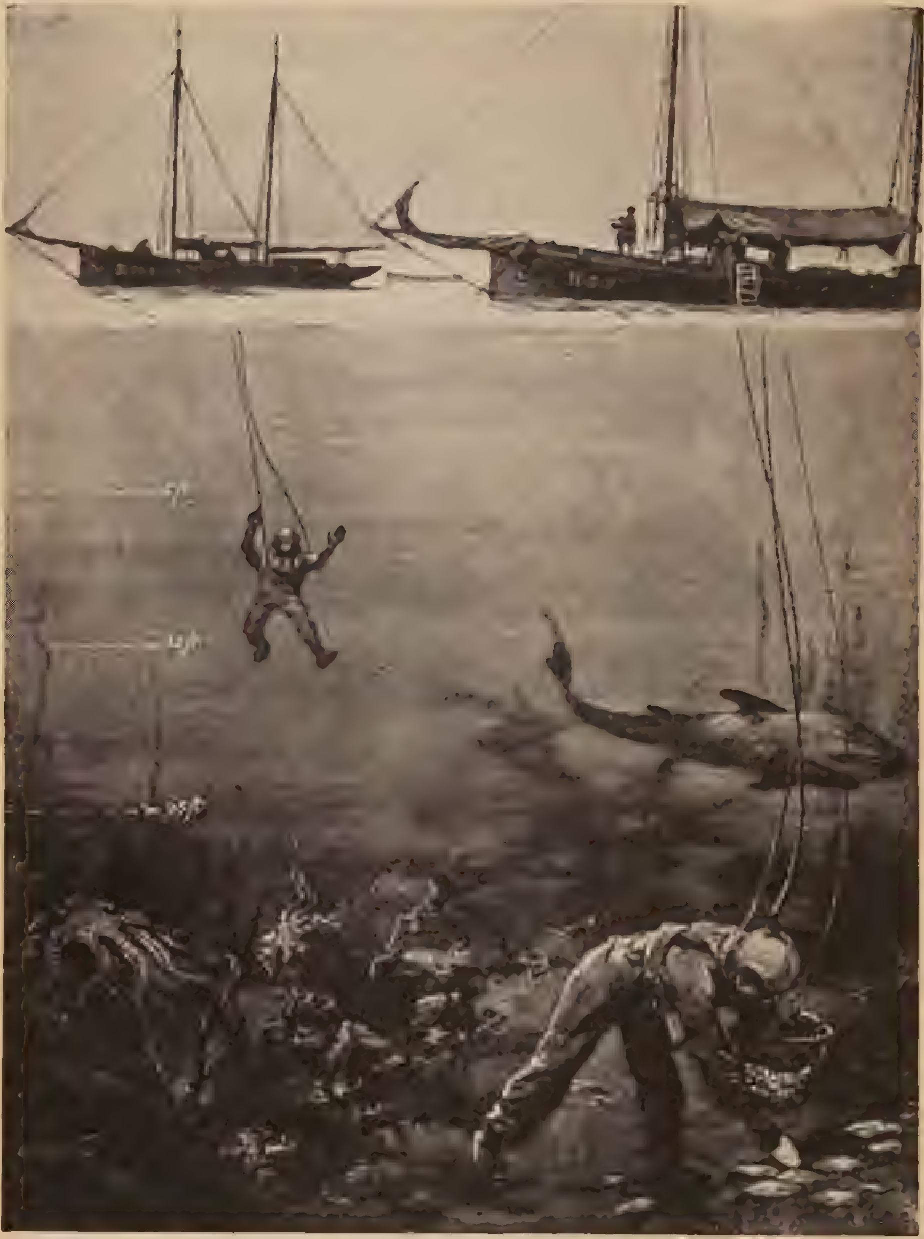
That was all!

This is What Happens in Winter



How would you like to keep that lantern clean, as the man is doing in our second picture? This is the Racine Reef Lighthouse in Lake Michigan. In winter the spray and sleet freezes on the lantern so that it shuts out the light almost entirely and the man in the lighthouse must see that it is kept clear.

Divers Gathering Pearls



In our story about pearls you can see one kind of a pearl diver at work. His only equipment is a basket, nose clamp, and a stone to make him sink. Here are divers in regulation diving dress gathering pearl oysters. One of them is putting the oysters into a basket let down by a rope from the ship above; the other is being hauled up to the surface. See how he is kicking. That is to quicken his circulation, which the pressure of the water and the cold have retarded.

The Man Who Works Under Water

"Like the pilot and the fireman, he takes fearful risks as a matter of duty."

DID you ever hear the story of the brave little Dutch boy who saved a great valley, with towns and farms, from being destroyed by flood? He found water trickling through a small hole in the dyke that walled out the sea. It was nightfall and no help was near. So he pushed his arm in the hole and held it there all night, keeping the break from getting larger. Such a boy, today, would get a Carnegie medal, be educated from the hero fund, and become famous.

There is another story much like that, but few people have ever heard it. The hero was a diver, and what he did was simply his duty—just a part of his everyday work. There was a break in a great dam of a reservoir, far below the water line. On the lower side, the water spouted out in a big stream. One diver was sent down to fix a steel plate over the break so the hole could be filled from the lower face. But in a moment he pulled frantically on the life line and was hauled up. He said any man who went down would be sucked into the hole.

The Brave Captain and His Fate

The captain of the wrecking boat said, no matter, the work must be done. He would go down. He put on the diver's rubber suit that is in one piece to the chin and wrists. He put on a copper collar, iron shoes that weighed thirty pounds, and a hundred-pound lead belt with life lines. After he stepped onto the ladder, a copper helmet with big goggle eyes screened with wire was screwed to his collar. Air was pumped in, swelling his suit out like a balloon and roaring in his ears like a railroad train. Before he could signal, air and life lines snapped. His body stopped the leak. It could never be got out. There he was, walled in.

Strange Suit That the Divers Wear

Much necessary work must be done under water by divers, in the deep sea and in rivers, harbors, and reservoirs. Sometimes ships are wrecked where they are as dangerous as rocks to other ships. If they cannot be pumped out and raised, they must be broken up with dynamite. From wrecking boats that

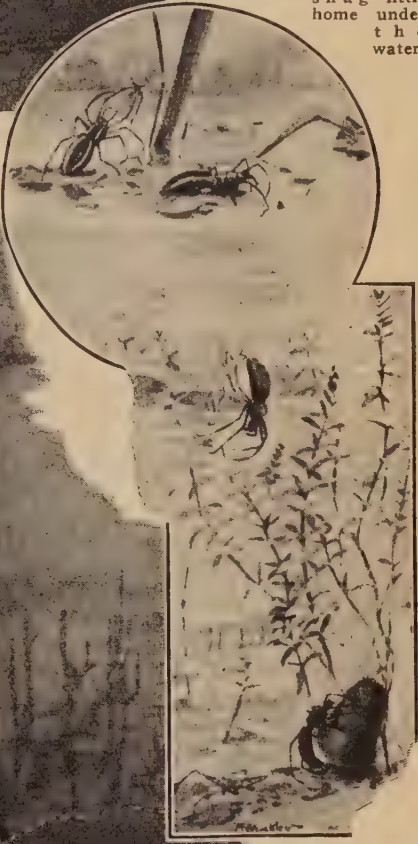
Getting Into His Working Clothes

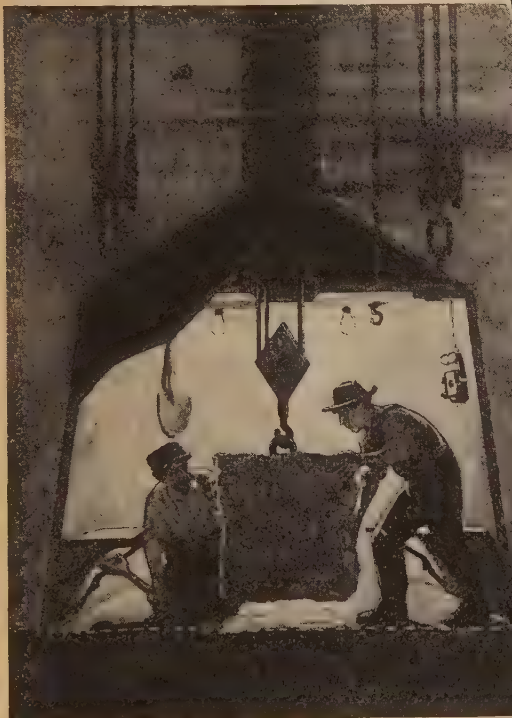
A diver's suit is so clumsy and heavy that he can neither put it on nor take it off alone. He has to be "buttoned up" like two-year-old baby brother.

Three Kinds of Diving Bells

Force an inverted, empty tumbler down into a pail of water and you have a diving bell—air under water, held in place by the sides of the tumbler and the pressure of the water below it. The air keeps the water from rising beyond a certain point.

The picture below shows fresh water spiders at work on their home which is another kind of a diving bell. The spiders spin a bell-shaped cocoon attached to some plant growing on the bottom of a lake or pond. Then they fill their home with air by carrying down a bubble of it at a time, using the plant as a stairway. When the home is full of air, held in place just as that in the tumbler is, they set up housekeeping and raise a family in their snug little home under the water.





Here is the diving bell which men have built. It is simply a bell-shaped, metal-covered house which is lowered evenly into the water. The metal makes it heavy enough to sink. When it reaches the bottom, the men can work and breathe in it. You see it is fitted out with a telephone and electric lights. It has an arrangement for keeping the air fresh, too. The men are placing one of the foundation stones for a big bridge. If they wish to move over to another part of the river bottom, they will sit on the little seats attached to the sides of the bell and then men, air, bell, stone and all will be swung the proper distance through the water by machinery above.

are just mud scows with steam pumps and hoisting tackle, and a machine shop full of tools, the divers go down into the water on ladders.

Various Work the Divers Do

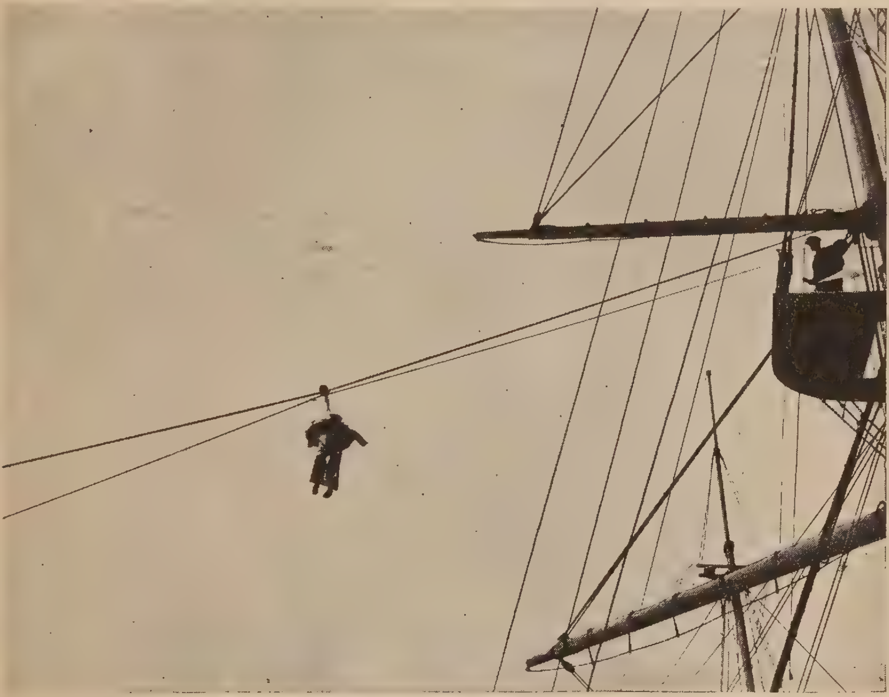
They do every sort of work under water, just by feeling, for they can see little or nothing. They go all over sunken ships; get papers, money and jewels out of captains' safes. They put in pipes for pumping; patch holes with iron plates, or cement; nail down hatches; fasten cables so a wreck can be dragged from a bar; and plant dynamite to blow up hulls. They cannot stay down more than half an hour and must work very fast.

Something different happens every time. Divers for pearl oysters in tropic shore waters are chased by sharks. All the weapons they have are the air bubbles they can let out in a rapid fire of silver bullets from the wrist bands, but those scare the man eaters away. Ship timbers often break loose from a wreck and stun the diver. Sand slides carry them down. A leak or break or tangle in the hose cuts off the air. If the life line is caught, the diver cannot signal. A diver cannot lift himself, but has to be pulled up. He wears a small telephone system by which he can talk with the man above. For the air he breathes he must depend on the man at the pump above, and on a small rubber tube. Like the pilot and the fireman, his duties involve fearful risks.

An Exhausted Diver

This man stayed down as long as he could. He could barely climb up the ladder. Here you see him having the heavy helmet taken off before he is helped over the rail, so that he can get a breath of good, fresh air as soon as possible.

Life Savers and the Beach Patrol



The Breeches Buoy

When a line is shot to a ship in distress the first thing to go over it is a packet of instructions telling how to make the rope fast to the mast or some other suitable part of the wreck. Then the breeches buoy is unloosed and begins the work of carrying people ashore in safety. It is a cork life-buoy with canvas breeches attached to it and usually carries only one person at a time. The picture shows how it works.

Lighthouses and Life-Savers

IF YOU have ever been to a seaside or Great Lakes resort, you may have seen a tall lighthouse, on a green lawn, out on the farthest point of land. At its foot is the keeper's neat dwelling, and nearby the comfortable quarters and boat house of the Life Saving Station. Along the most dangerous parts of the Atlantic coast there is a government station every five miles. They are farther apart on the Gulf coast, and fewer still on the less dangerous Pacific coast. On the Lakes nearly half of the stations are on the populous shores of stormy Lake Michigan.

In the winter, almost surrounded by dreary wastes of water, the life is lonely. But the life-saver

A Life-Boat and Its Crew

© *Underwood & Underwood*

Modern life-boats are self-righting; that is, they are constructed with air-chambers and are ballasted so that if tipped over, even with their crews in them, they will quickly turn right side up again. Valves automatically bail out the boat. The life-boat in the picture is a rowboat. There are also gasoline and steam life-boats for the coasts where they can be used. Notice the clothing of the men—cork jackets, rubber gloves and mittens.

is a soldier. Every hour has its hard duty. The crew are drilled daily in handling the heavy beach-wagon; in running the life-boat off its rollers into smooth and rough water; in swimming in cork jackets; in signaling with the Coston light; in firing the life line; building bonfires on the beach; pulling in the breeches buoy and the life-car over the cable, and in restoring the half-drowned and frozen. And then, as policemen patrol the city streets, so life-savers patrol the beaches, day and night, in six-hour watches.

Kept Constantly in Training

The night march is the hardest. At sunset two men leave each station, and walk in opposite directions, half way to the next station. In wind and rain, snow and sleet, bitter cold and flooding tide, thundering combers and heavy sand they walk, with only a lantern or a dog for company. The first man to see a vessel in distress burns a Coston light. This is a torch that, on being struck, leaps into scarlet flame. It can be seen for miles. From man to man the signal is passed, as fast as a telegraph message. Every station on the coast to windward keeps a lookout. When the ship grounds on a bar, it may not be seen for fog or storm, but it blows a fog horn and sends up rockets.

Night March on Stormy Coasts

They're Off to the Rescue!

"All hands!" bellows the captain of the station nearest the wreck. It is like the striking of the fire gong in an engine house. Men jump into cork jackets and oilskins, grab their lanterns, run out the beach wagon on its broad trucks, and the life boat. They slip into the rope harness and run. On the beach wagon are the ropes and buoys, shovels, picks, sand anchors, shot-line box and cannon,

Life Savers at Work

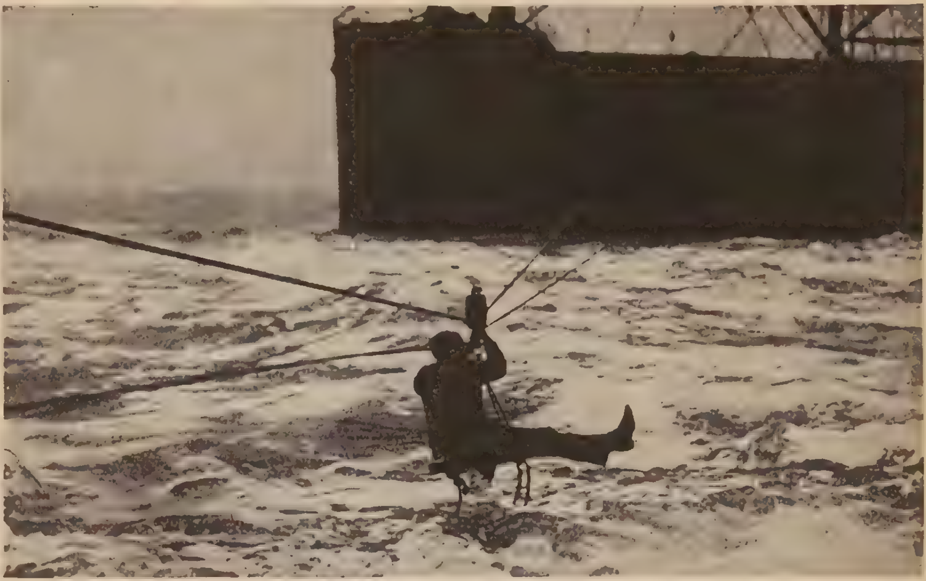
Launching the Life-Boat

Because of the dashing of the waves and the roaring of the wind, the captain gives his commands through a megaphone. Launching the life-boat and handling it after it is launched, besides being dangerous work, must be done quickly. All the men work together like a well-trained team of football players. At such times each man knows what his share of the work is and does it quickly and well, because he is drilled at this work like a soldier, every day he is in the service. In the lower picture the two life-boats are trying to get alongside the injured vessel, whose shadow can be seen at the left.

© *Illustrations Bureau*

Rescue Work in a Choppy Sea

Another Kind of "Trolley Car"



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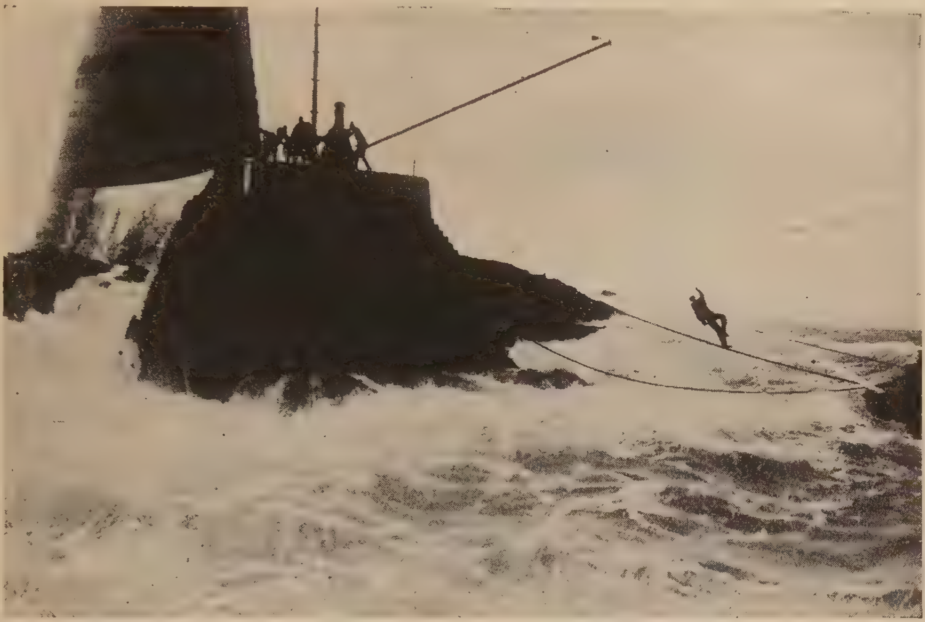
The picture shows a man being brought ashore by an apparatus similar to the breeches buoy in operation, from the steamer Gradac, which was grounded off the coast of Northumberland, England.

"All Hands Saved"

Everyone on board has been rescued and the ship is sinking rapidly. Two weary life-savers are hauling in an empty buoy.

When the Breakers Are Too High



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On steep, rocky coasts it is hard and dangerous for a boat to land. In the picture the difficulty is being overcome by a crane on the landing stage of a lighthouse. Instead of taking each boat-load of passengers through the pounding breakers in which their boat is liable to go to pieces, the life-savers are coming as close as possible to the lighthouse and hoisting them on to it with the crane.

When There is a Sandy Beach

Where the water is shallow and the beach sandy, the people rescued can be landed on shore at once, for, though the waves may be high, they are not so dangerous as on rocky coasts.

and material for a bonfire if one can be kept burning. If the sea is high the first thing tried is to tie a cord about the shank of a bullet and shoot it to the wreck. But if several shots miss the deck, or the survivors are helpless, the life boat must be launched. It may be beaten back, overturned or spun about. If it can be got beyond the half-mile wall of surf, a strong swimmer may drop overboard and carry a line to the wreck. He battles with smashing waves and climbs by the anchor cables, perhaps to a deck as steep as a roof, whose rails have been swept away.

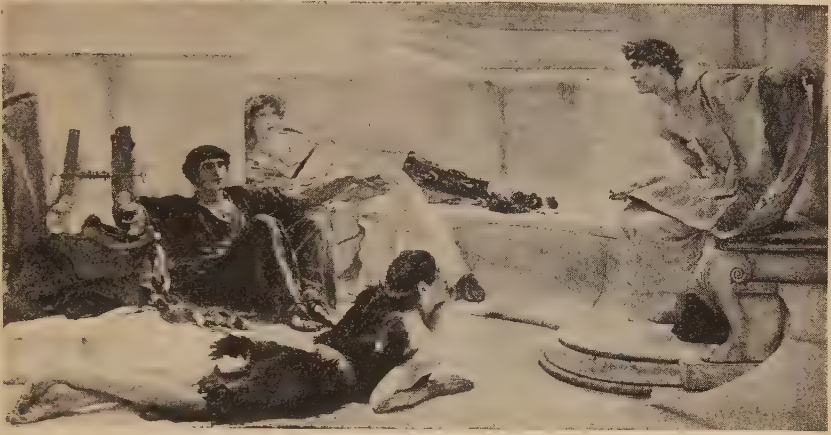
Thinking Only of the Lives of Others

He drags half frozen people from the rigging, pulls in his line, rope and cable. "Women and children first" he puts into the breeches buoy, or closed life car, and starts over that sagging "trolley" line. The captain comes out to help him. Not until the last passenger, sailor and rough coal heaver are safe on land does the life-saver come ashore. And then it is often with a shivering dog or kitten in his arms.

"Women and Children First"

Then it is thawing and drying by the bonfire, wrapping in oilskins and running up to the station, and hot coffee, blankets and beds for the rescued. But for the life-savers—they have merely done their duty. Some of them can turn in to rest, but two, at least, get into dry clothing and go out again to patrol the beach.

Wonderful Pictured Knowledge People of Long Ago



THIS is a scene on Lesbos, one of the islands in the blue Aegean Sea, before the days of books. Sappho, the beautiful Greek poetess, who wrote such wonderful verses that she was known as the Tenth Muse, lived on the island of Lesbos, where she was the head of a school of women poets. Tired of singing and dancing to the accompaniment of the lyre and the tambourine, Sappho and her friends have all collected on these marble benches overlooking the blue sea, and a young Greek is reading passages from Homer with the poem spread out before him on a scroll. The scrolls were the only kind of "books" the Greeks had, and they had very few of these. But they had extraordinary memories. Even boys at school could recite the whole of the Iliad and the Odyssey.

These scrolls were made of the fine pith of the Egyptian papyrus. The strips were glued together in one long sheet, which the reader gradually unrolled with one hand and rolled up with the other as he read.

The Greeks were the most brilliant people who ever lived. Everybody knows their sculpture. But they were equally great in poetry, science, philosophy, oratory—in almost everything that makes life beautiful and interesting. No people ever produced so large a portion of great men out of so small a population. Just think of it—Athens, the most brilliant of all the Greek cities, had only about 30,000 citizens.

And do you know why the Greeks did all these things? Because among other things they were, more than any other nation in history, what we may call "pictured knowledge" people. They not only reproduced and created beautiful forms in their statues, their temples, their vases, but they thought in pictures, talked in pictures, wrote in pictures. Almost every word in their language was a picture and carried its meaning on its face. The Greek word for cow, for instance, meant "foot dragger." Did you ever notice the peculiar way in which a cow drags her feet in walking? Not only was it easy for Greek children to remember such picture words, but the use of such words made them very observing. You know how hard it is to remember the meaning of new words, and how easy it is to remember a picture. So, because their language taught the little Greeks to observe whether a cow does drag her feet, for example; and the things learned in Greek words were so easy to remember, they learned them very fast. Do you know why you can dream such long dreams in such a short time — dreams that would make five reels of a movie show, but really only last a few moments when you are dreaming? It is because a dream is a succession of pictures of whatever you are dreaming about.

Because of this habit of seeing everything very clearly, the Greeks were like eager, curious children —grown up people and all —and they learned about the world and its wonders and its mysteries, and told about them and what they thought about them in sculpture, temples, philosophy and oratory, in poetry and song.

The Riddle of the Reed

Just to show you what children even the grown-up Greeks were—how do you suppose they amused themselves, say at an evening party? By asking riddles, for one thing. Here is a Greek riddle: "I was a reed, a useless plant at first; for from me grew neither apples nor figs, nor the clustered grape. But a man gave me thin lips, and made me the channel for a narrow stream. From that time, when I drink black ink, I, like one inspired, speak winged words with a voiceless mouth."

Can you guess it? There is a drawing of it right under your eye. It is the reed pen. But isn't the word-picture in the riddle just as perfect as the picture in the drawing? Every little thing is put into the word-picture—the reed, its long narrow channel full of ink, the thin lips, and how it drinks when you dip it. But this Greek riddlemaker was not content with making a picture of the pen alone. He adds the picture of a man speaking and of words flying through the air with wings, and the shape of the grape (clustered). Words like these are really pictures. Can't you see them?

Why the Greeks Did Not Like Learning Their A B C's

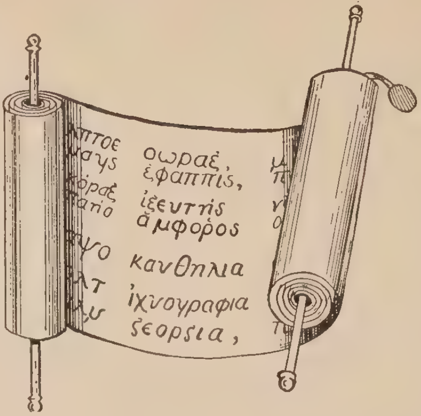
The Greeks thought it so much more important to tell things in pictures than in mere printed words, that for centuries they did not use the letters of their alphabet for writing stories or poems at all. They only used them for recording contracts and other business transactions. They said the written word did not look like the thing it stood for, and when they finally did begin writing their wonderful books, you see they still used these words to make pictures.

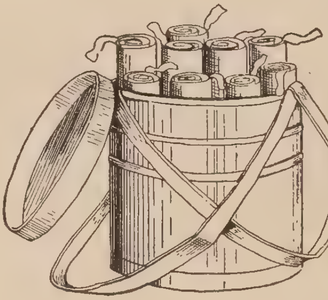
Why Pictures Should Be Taught to Talk

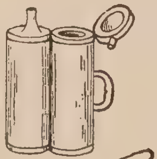
The Greeks not only had the fondness of children for pictures, but they were like children in another respect. They did love to talk. That is why the great Greek philosopher, Plato, said you learn so much more by having people tell you about things and answer your questions than if you merely read about these things, or even looked at pictures of them. "The people in paintings," said he, "look as if they were alive, but you ask them a question and they preserve a solemn silence." So you see why in Pictured Knowledge we have made the pictures talk.

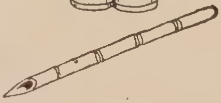
The Pictures on This Page

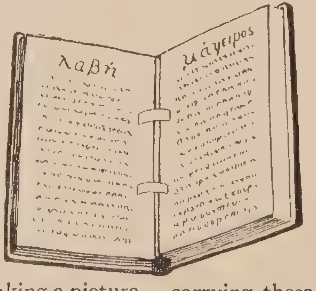
The pictures on this page are interesting chapters in the history of books. At the top is a Greek scroll, with a little label on a slip hanging out of it to show when the scroll was all rolled up what it was about. The next picture shows a case for carrying these scrolls. Next is a reed pen and an ink stand, and below is a book made of separate leaves. It looks much like the books we have today, doesn't it?



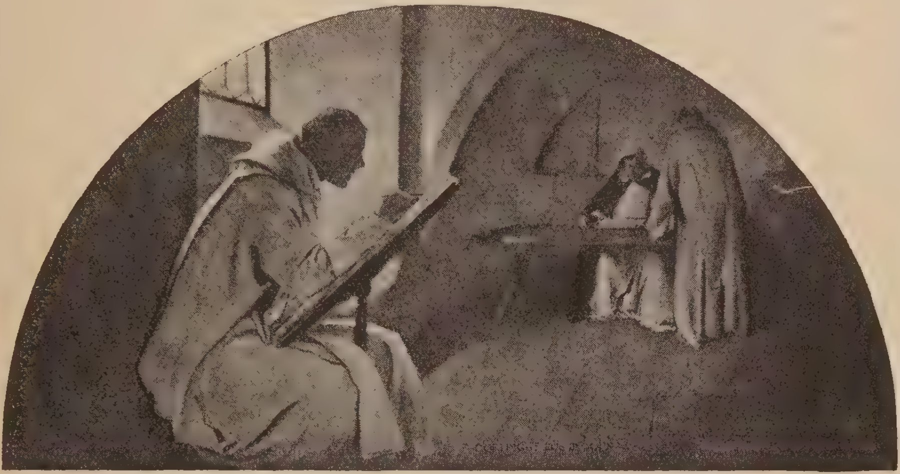








How Pictured Knowledge Learned to Talk



The Scribes

It was another long time after books with "lids" were invented before men stopped making them with the pen—just as you make those delightful illustrated books of your own about geography, history, and things in school. The most beautiful work of this kind was done in the monasteries. You see one of the monks with a folio volume on which he is working like an artist at his easel. He is sitting where he can get a good light. He is, no doubt, designing and coloring an illuminated letter at the beginning of a chapter in the book. As early as the Thirteenth century, in spite of this slow way of making books, there was quite a book trade. No university or monastery was complete without its staff of scribes who wrote the main body of the work, and illuminators who put in decorations in the initials and on the borders of the page. No book was popular unless it was ornamented and illuminated in this way.

WELL, I thought I never *would* get here!

Who am I?

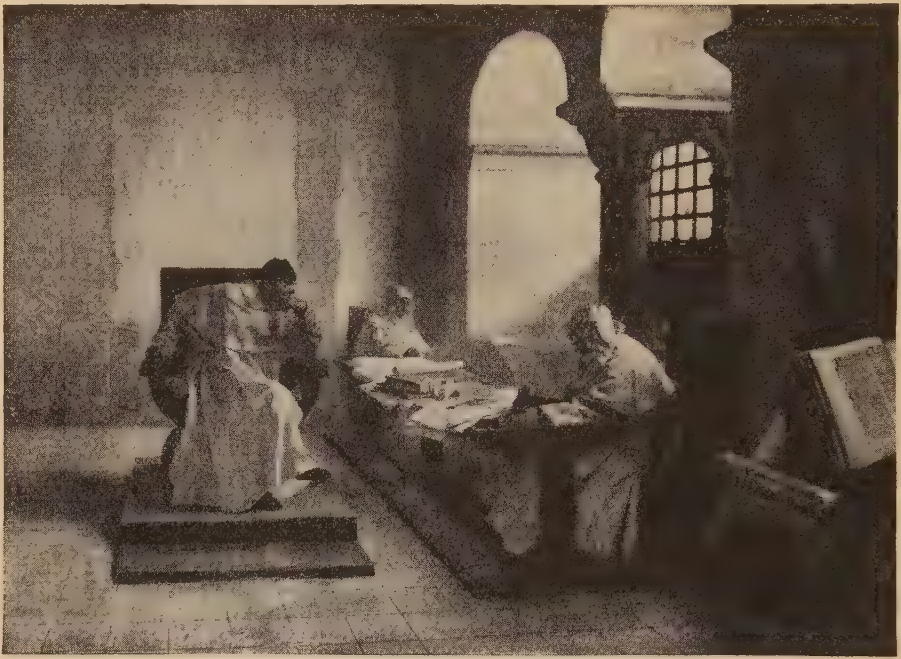
This book you are reading. I am just full of stories of other things; I tell other people's stories, so isn't it fair to let me tell my own story? Such exciting adventures as I had with men and machines. To get the paper I was printed on—now what is that wasp doing in here? It isn't *his* story.

"Buzz-zip! Speaking of paper," says the wasp, "I thought I would tell you that I was the first paper-maker in the world. Human people think themselves very bright. But really they are slow about some things. Ages before men made paper we wasps used bits of wood, chewed them to a pulp, and then spread the pulps out thin to dry. We have always made our little gray nests that way. Good-by."

Where the Old Rags Go

Mr. Wasp is right. But to make paper, you could print on, or write

In the Library



The books of the Middle Ages were mostly on law or religion. Here we see a high dignitary of the church sitting in his chair while his assistants are looking up authorities for him and they are talking matters over. You see they still had important manuscript in the shape of rolls, although new works were bound in covers. On the right you see a large volume resting on a stand similar to those on which our big books, like dictionaries, are sometimes kept today.

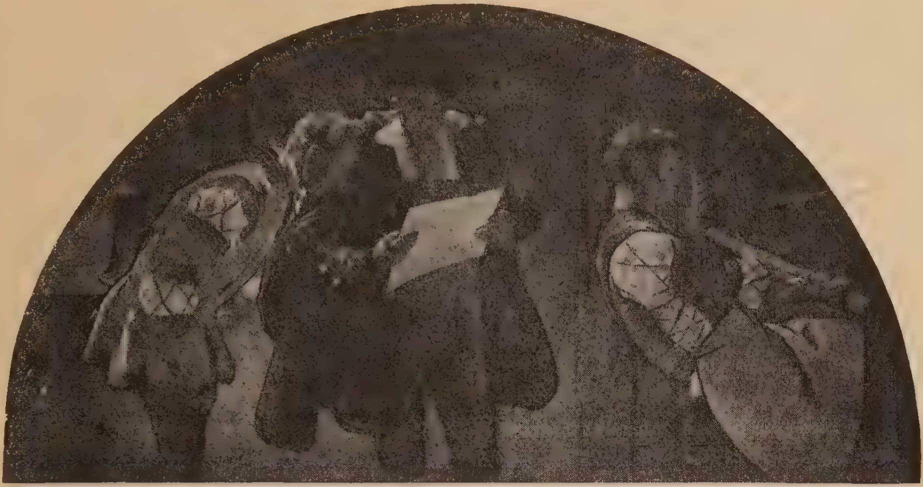
on, we would have to bleach the nest of an ordinary wasp and iron it smooth. There is a wasp that makes a nest so smooth and white you can write on it. Fine book papers, such as I am printed on, are made of rags and wood pulp mixed. Whole spruce trees, with the bark stripped off, are ground to a mush in a machine and mixed with pulp of cotton rags. The pulp is boiled with lime and soda to clean it. Then it is bleached with acids, and thinned with water until it looks like milk—but thinner.

Then this milk flows out of a tank onto a wide copper wire screen belt. On the belt it drains and is shaken gently together until it becomes a thin wet sheet, like a wet sheet of blotting paper. As it leaves the belt it passes between rollers that look like big clothes-wringers. But these rollers are hot. They dry the pulp, iron it smooth, trim and wind it—miles of it. Paper for newspapers is wound on big iron spools ready to be fed into the newspaper printing presses. But the kind of paper you are looking at is cut into large sheets and packed in bales. The smooth paper on which my colored pictures are printed—remember who is talking—was starched with glue and white clay. Then it was steamed, ironed and polished until it was as glossy as father's collars, when they come home from the steam laundry.

How the Printer Says His A B C's

Making the type from which I am printed is another story. Has your father a rubber stamp? The rubber

The Press



This is one of the famous pictures you will see on the walls if you ever visit the Congressional Library in Washington. It was painted by an eminent American artist, John Alexander, and is called "The Press." It shows a noble of the Middle Ages examining with great interest, a sheet which has just been printed on the screw press, which the man is working on the right. Presses were great novelties in those days, and you can imagine how their work must have interested a man of fine culture like this nobleman.

letters on it were molded. The type in printing offices was cast in molds. The letters on the ends of the bars in a typewriter were cast, too. When father was a little boy all types were cast by pouring melted type-metal into molds. Type was kept in the printer's "case," each letter in a different nest. The printer picked up one type at a time, and set it in a box, or "stick," to spell words. That was slow work. It was the typewriter that hinted at a new way of setting type. When the key of a typewriter is struck, a bar flies up, hits the paper and prints a letter. To print on a typewriter is like playing on a piano.

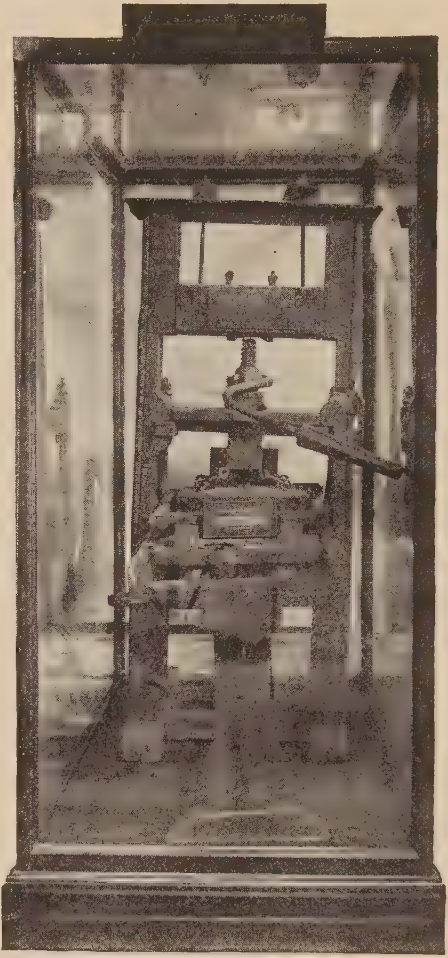
"Why don't you *make* your type as you need it, Mr. Printer Man?" the typewriter seemed to say.

So men, taking this hint, built typesetting machines of two kinds. One kind is called the monotype machine, the other the linotype machine. When an operator of a monotype, or one-type-at-a-time machine strikes a key, a hole is punched in a long paper ribbon. This ribbon is wound on a spool, something like the music roll of a piano player. In the piano player, as the roll unwinds, a tune is played. So when the monotype roll is put into the casting machine and unwound, words are spelled in hot type-metal.

Spelling With Hot Lead

Inside the machine is a frame filled with little blocks of wood, with letter molds cut in the top. That frame darts around like an excited water bug. Each letter that was struck on the keyboard comes, in turn, under a pot of type metal that is kept melted by a gas jet. A drop of molten metal spurts out and fills the mold. It works in the queerest way. It's like playing a flute! The perforated paper ribbon is made to run over a tube with holes in it, just as you slip your fingers over holes in a flute. The tube is filled with

The Press that Franklin Worked



While you are in Washington you are sure to want to go through the museum of the great Smithsonian Institution. There you will see what is known as Franklin's printing press, the one he used when he was a journeyman printer in London. It is kept in this glass case because, unless it were protected, visitors—particularly inquiring boys—would be sure to take hold of that handle and give it a turn just to see how it worked. You laid your sheet of paper for printing on the flat bed of type, just as you see it in the small country presses today. Then you turned a crank (not shown here) like the crank of a windlass. This carried the bed with its type on a cog track under a metal plate called the platen. The screw you see in the picture fitted into the center of the platen in a kind of ball and socket joint. Then you gave the handle a turn, and that screwed the platen down firmly on the paper and pressed it against the type. The action in a screw press was like that of a screw when you turn the screw-driver, only the "screw-driver" in the press stood at right angles to the screw. In printing a newspaper on this press you could only print a page at a time.

compressed air. When a hole in the ribbon comes over a hole in the tube, the air is blown through and into a pipe. The pipe is a sort of popgun with a pin-plug in it. The pin jumps out and pushes that frame of letter molds about, so the right letter comes up to the melting pot to be filled. You would think the monotype machine had brains.

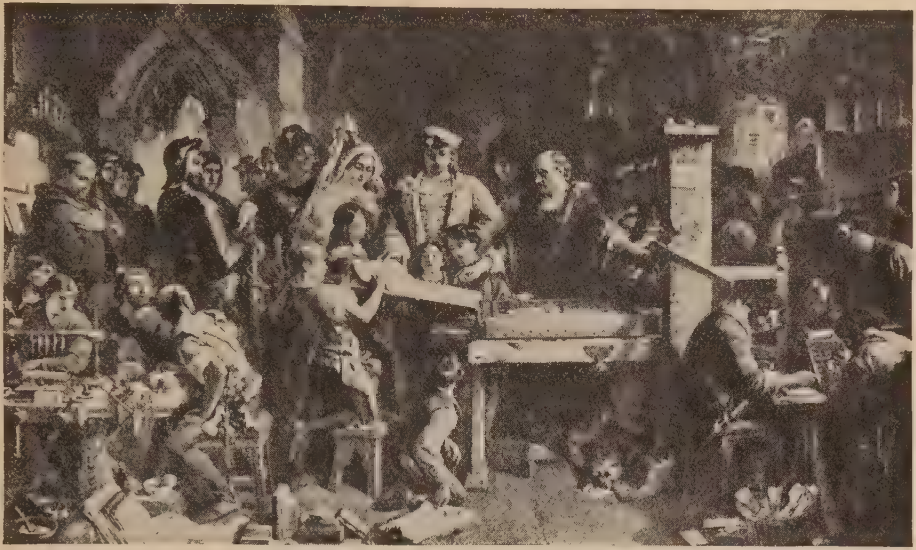
A "Line-o'-type"

The linotype casts a whole line of words in one solid bar. The type molds, or matrices, are in the edges of flat pieces of brass. The operator of a linotype plays on a keyboard, too. Watch him make that machine spell something for you. When he strikes a key a brass letter mold rushes down a narrow alley like a boy on a toboggan slide. "Rat-tat-tat, clickety-click-click!" a crowd of molds slide down, are carried across a belt, and lined up like a row of tin soldiers. Then the machine moves the whole row over to the melting pot. A plunger forces the metal up through a tube like the stem of a tobacco pipe and fills the matrices. In a moment the metal hardens into a line-o'-type. You have to read it backwards, like Hebrew.

"Hello, John! I can beat you at spelling and punctuation," it reads.

Can it? Can it beat you? But just watch the little brass molds go home again. Each one is a latch key to unlock its own door. You know a Yale door key has notches that just fit the lock.

Caxton, the King, and the Printing Press



Imagine a king and his court today visiting a little print shop like this. Nearly every boy wants a little printing press of his own, and sometimes gets his first introduction to the wonders of machinery in the work of the press that prints the newspaper in his town. But even kings could enjoy the wonders of the printing press in the days to which this picture takes us back, for at that time the printing press was a new thing and a wonder-working device. If you wanted to own a book printed on this press, it would cost you more than all the beautiful school books you have had, or will have even if you go clear through the university, for Caxton, who is standing behind the press showing it to the king, was the first English printer. The books that he printed command very high prices, partly because they are very beautifully done, and partly because of their historic interest and their rarity. One of them was sold in London some years ago for over $10,000.00.

The king, Edward IV was at this time a handsome man in the prime of life, as you see by the picture. The lady on his right is the queen, Elizabeth Woodville, whom he married secretly, against the wishes of Warwick, "the kingmaker." Although Edward was king of England, he had very gracious manners toward his people. The three children with King Edward and Queen Elizabeth are Elizabeth, Richard, and Edward. The little girl afterwards became a queen like her mother, as the wife of Henry VII. Look up the story of little Edward the Fifth, and read about these three royal children.

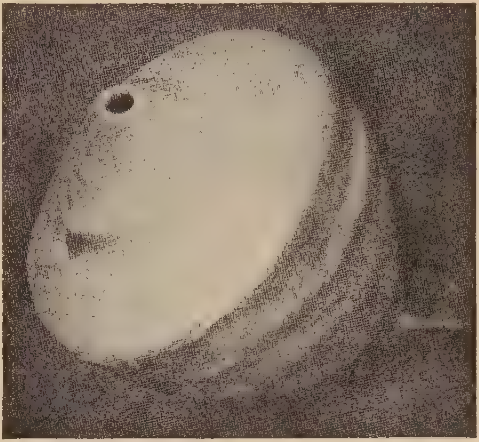
The king, his family, and the court are looking at the freshly printed page which the little printer's boy is holding before them. The little group of men around the table at the left comprise the bindery of this printing establishment. Notice the strings suspended from the horizontal bar; they are for fastening the pages together. On the floor there are glue pots, loose leaves to be bound, and books all ready bound. At the right two men are at work setting type by hand. Near them is a basket that looks like a waste basket. It holds the manuscript that is going to be printed next. The beautiful pillar and arches in the background look rather queer in a printing office, don't they? But this one was set up in one of the rooms of the king's palace at Westminster.

Well, the little brass molds have notches, each one different from the other. And these notches have teeth. With these teeth they cling to a "distributor" bar to be carried up that toboggan slide. Channels and stalls open along the way, and the molds try every one, but they have to go on until each finds its *own* door. They act just like little pigs, these little molds, poking their noses into every hole, until they find one that they fit. Then in they go!

To make a book is like the seven labors of Hercules. When one hard thing is done there is another waiting. In big printing offices, printing is not done from the types, but from copper plates called electrotypes.

A type page is laid on an iron table, warmed by steam and brushed over with the same kind of smooth black powder that you get in sharpening a lead pencil. It is called graphite. This is to keep a thin sheet of wax, that is laid on the type, from sticking. Press a penny into a piece of soft gum and make a picture of it. In the same way a wax impression is made of the type page. Then the wax is lifted carefully, dusted on the face again with the graphite powder and hung in a bath of water, in which copper and sulphuric acid are dissolved. After it is dissolved, of course, you cannot see the copper at all. You know you can't see the sugar or salt that is melted in water. Now, when the current of electricity is turned into the bath, the copper just flies to the graphite powder on the wax. The copper forms a thin shell with the shape of the type on it, like the shape of the penny in gum. This is called electrotyping. Then the wax is melted out of the shell. The back of this copper plate is filled with lead to make it solid, and the plate is nailed to a wood block.

The Wasp Who Told Us How to Make Paper From Wood

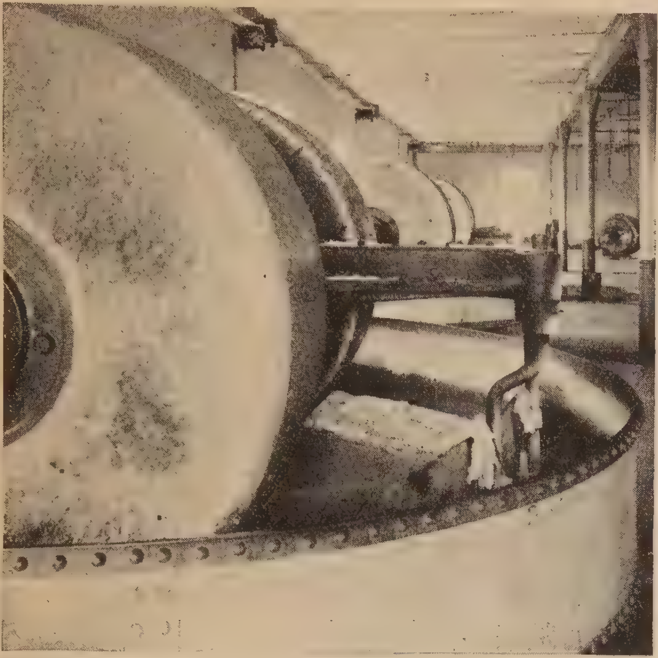


Of course all of us have heard that the wasps were the first paper-makers, but did you know that it was a wasp who told the first paper-makers how to make paper from wood? And it was a particular wasp who did it. She was born in the Harz Mountains in 1839. One day in the fall a German paper-maker named Gottfried Keller, returning from his mill, stepped on an empty nest which this wasp had made and kept house in with her brood during the summer, and which the autumn winds had blown down. He crumpled it in his fingers, and decided it was wood pulp and wondered how the wasp did it. With a friend he experimented, decided that the wasp had made her paper house out of spruce, tried it on a grindstone, using water to mix the pulp, as the lady wasp had used saliva, and so discovered the secret. The thousands upon thousands of newspapers that are turned out from the presses all over the world every day, are all made from wood pulp paper—all because of the hint of this little lady wasp of the mountains.

Our picture here shows a very high quality of white paper made by a Brazilian wasp. The surface is so fine and smooth that you could write on it with a fine pen.

How I Had My Pictures Taken

No, I cannot be printed yet. My pictures have to be made. A book without pictures is like an egg without salt. I have three kinds of pictures, each kind printed from plates



Like Gottfried Keller's Old Grindstone

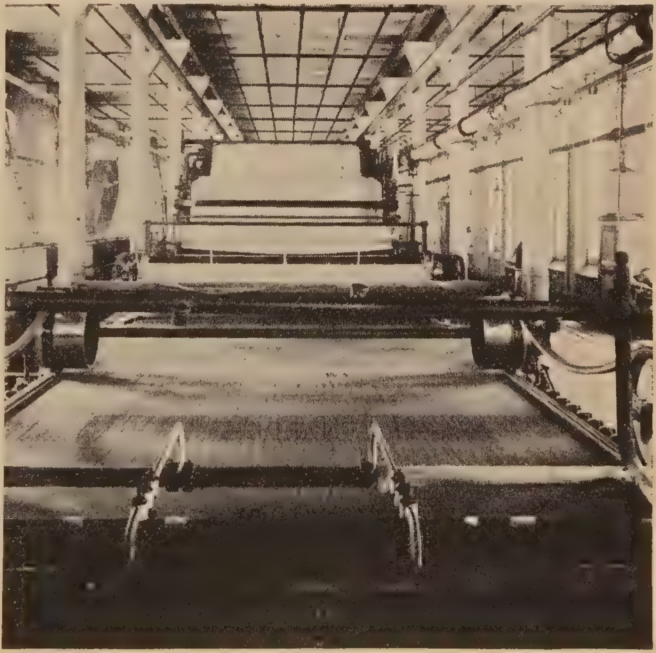
Here you see how the great paper mills have taken the hint from the wasp and Gottfried Keller's old grindstone. The huge grindstones here are called crushers because they crush the pulp after it has come from the grinding machines. This is done so there will be no lumps or strings left in it.

These engravings are reproductions in line or screen effect from drawings, paintings, photographs or objects. If you have a kodak you know that the photographs you make are from exposures, through the lens, on a film which unwinds from a spool on the inside of your camera. This film is highly

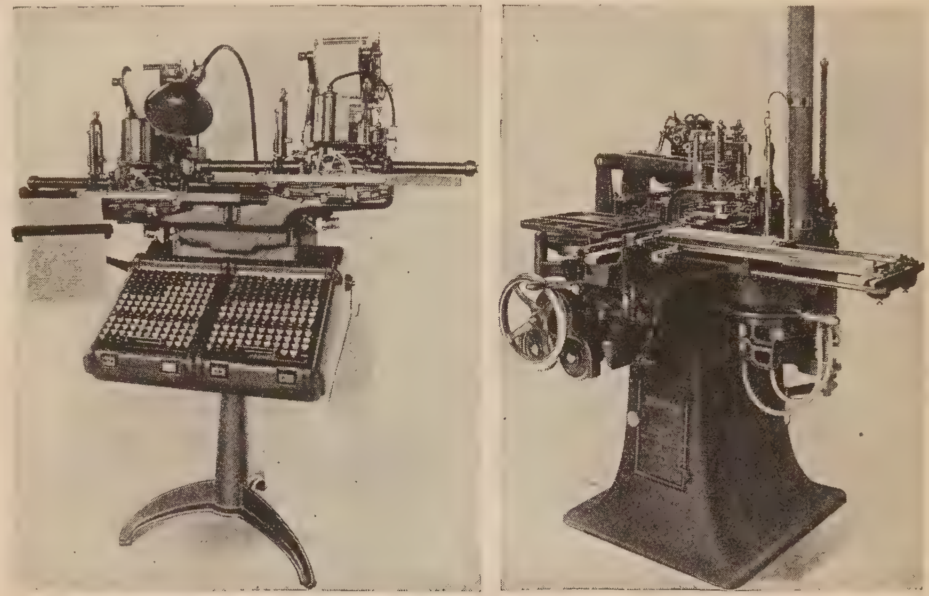
made by the photo-engraving process, and known as zinc etchings or line engravings, black and white or half-tone engravings, and half-tone color engravings.

Where the Pulp Is Changed to Paper

Here is where the pulp is changed to paper. Before you, you see running an endless belt of fine mesh wire cloth on which the pulp is spread out. Those rubber belts on the right and left move with the pulp and keep it in place. As the stream flows along, the water filters through the wire mesh, leaving the fiber on the surface, and the shaking motion of the wire cloth helps to knit the fibers together. In the distance where you see the white paper mounting toward the skylight, the sheet of pulp has passed under a cylinder called the "dandy roll." Then it goes between the first press rolls, then through the second press rolls, then to the drying cylinders, and on through the calenders, or finishing rolls.



The One-Type-at-a-Time Machine



Here are two pictures of the Monotype machine. The one on the left shows you the keyboard on which the operator spells out the words just as the typewriter operator does on her machine. Above, and to the right, you see the paper ribbon in which the holes are punched. When the roll is put into the casting machine (on the right), it causes the machine to cast these letters in metal, and set them up in rows so as to spell the words which the operator has written.

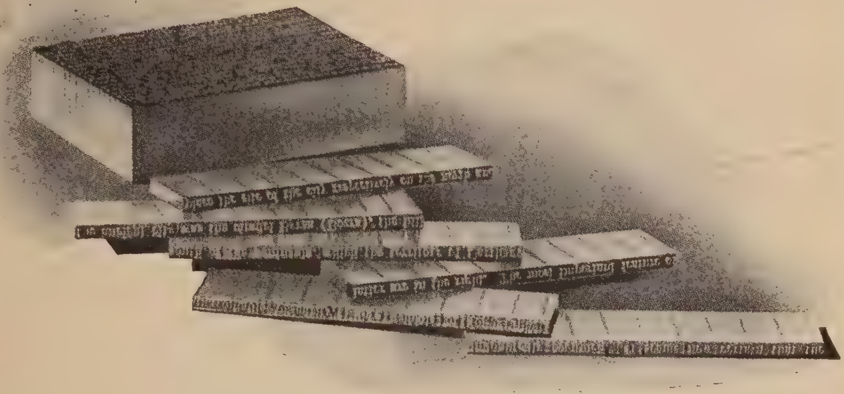
sensitive to the action of light, and when the exposure is made the image is transferred to that film. When the film is developed you have what is known as a negative. From this negative you make prints on sensitized paper. The result is a photograph of the object or scene.

Suppose you had a pretty drawing in school that a newspaper wanted to reproduce. The engraver would photograph it much in the same manner as you had photographed your little sister with your kodak, only his camera would be larger and it would contain a sensitized glass plate instead of a roll of film. The negative would be printed on a sensitized piece of thin zinc. This print would be ink-resisting on its entire surface, with the exception of the lines corresponding to the drawing from which the negative had been made, so that in the next operation, when the engraver runs an ink roller over the plate, the ink takes only on those lines and leaves the rest of the plate perfectly clean.

The Use of "Dragon's Blood"

The plate is then warmed slightly and dusted over with "dragon's blood," a resinous red powder. The plate is then heated until the powder is thoroughly burnt in on the lines of the drawing. Then it is placed in a solution of nitric acid and water. The dragon's blood protects the lines of the drawing from the action of the acid, which etches or eats away the zinc between the lines. The plate is left in the acid for only a short time, for the acid must not be allowed to eat away the zinc under the lines of the drawing, or else they will break away, and the plate will be useless for printing purposes.

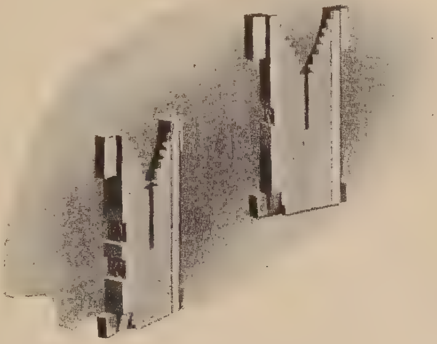
The Linotype



This picture shows you where the linotype casting machine gets its name. You see each line of type is in one solid bar.

The plate is usually placed in the acid three times before an etching of the proper depth is secured. Each time it is taken out of the acid the plate is dried, then heated, and brushed with dragon's blood, and then burnt in hard. Thus the dragon's blood serves to protect the sides of the lines, as well as their top surfaces. At last all the lines of the drawing stand up clearly on the zinc plate. The plate then goes to the "machine room," where all the useless zinc is cut away, leaving only the line engraving, which is then mounted on a block of metal to make it type high. It is then ready to print from.

Two of the Little Type Makers

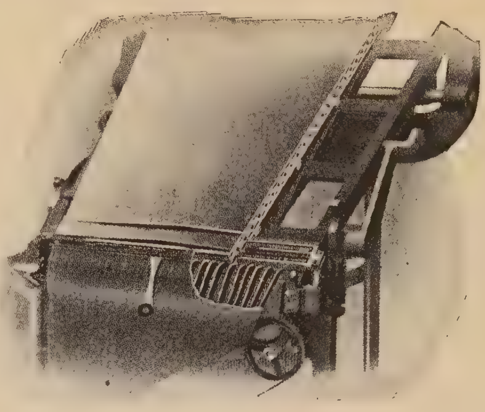


These are two of the little type makers, or matrices, in which the type which make up a line, are cast. One of them has one letter, you see, and the other two. The two-letter matrices may have one letter with a Roman face while the other may be Italic, small capital, or some other kind of type. The advantage of this is that if a line is to be composed partly of Roman face and partly of another face, the operator, by moving the lever, can determine which letter is to be cast. The principle is the same as that of the shift-key and double lettering in a typewriter.

You notice that most of my pictures are made up of little dots. Such pictures are what are called "half-tones." Half-tones are made on copper. A negative is made from a photograph, a wash-drawing, or an object, just as for a zinc etching, but in this case the negative is made through a glass screen that is placed in the camera just in front of the sensitized glass plate. This screen is composed of ruled lines crossing each other diagonally. The number of ruled lines on this screen vary from 65 to 200 to the inch. My pictures have 120 lines to the inch. When the negative is developed it is composed of tiny dots made by the light penetrating between the lines of the screen. These dots make fine, broken lines, that reproduce the most delicate shadings of the copy. The lines in zinc etching or line engravings, you notice, are continuous and unbroken.

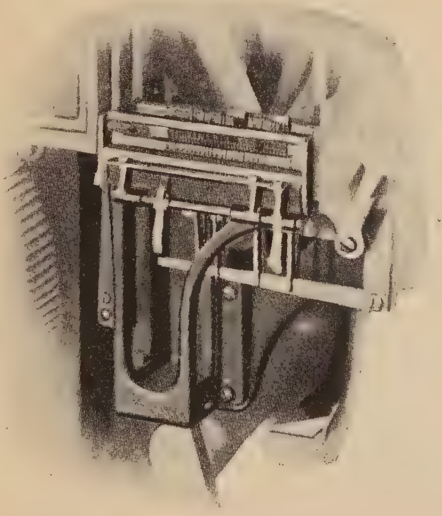
The colored pictures are also made from half-tone engravings, three engravings being required for each picture. One engraving is to print in yellow, one in red, and the other in blue. Yellow, red and blue are the three primary colors that you learned about in school. From them all other colors are produced. By the three-color process the yellow plate is printed first. The red plate is printed right on top of the yellow. The blue plate is then printed on top of the yellow and red. These three plates are made separately and a negative is required for each plate. In making the negative for the yellow plate a "color filter" is placed

Matrices Waiting to be "Called"



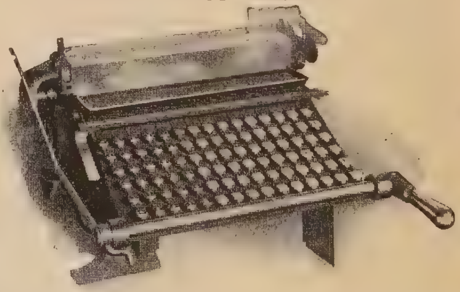
The space where the matrices are kept until they are wanted is called the "magazine." This picture shows the magazine with a portion of its cover removed to show a row of letters in their compartments. All letters in a given compartment are of one kind. When the operator presses the corresponding key on his keyboard, it releases one of these matrices and down it comes "like a boy on a toboggan slide." As the different letters follow, they line up beside one another in the assembler, like soldiers standing at attention.

The Assembler



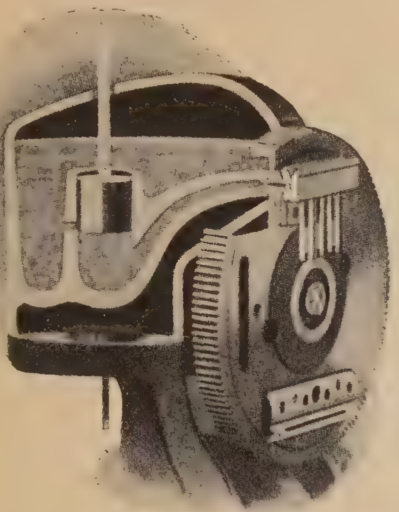
This is the assembler. It holds the matrices of the type together much as a man setting type by hand holds them in his "stick." It has quite a lot of machinery about it in order to take care of the proper adjustment and spacing of the matrices as they drop down into line.

The Linotype Keyboard



This is the keyboard of the linotype. You see it is constructed on the same principle as the keyboard of a typewriter. The bar just above the keys is called the space bar. When the operator touches this bar it lets down a matrix with a blank face which thus makes a space between the words. After the assembler has been filled, the operator presses down the handle on the right which causes the whole line to pass to the front of the melting pot.

Inside the Melting Pot



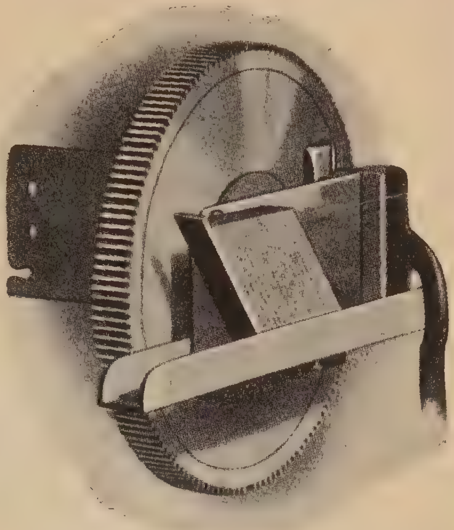
Here you see the inside of the melting pot and just how the plunger forces the metal up a tube like the stem of a tobacco pipe and fills the matrices. The line, after it is cast, you see, lies horizontally. Just pausing long enough for this thin line of metal to harden, the wheel revolves, thus bringing the slot you see on the left opposite the opening in the casting box and carrying the type which has already been cast so that it assumes a vertical position. The next picture shows what happens to this bar.

over the lens of the camera. This filter leaves out all the red and blue that is in the copy, and photographs only what is yellow. In making the negatives for the red and blue plates other filters are placed over the lens, leaving out all other colors in the copy, except the red or blue. When the three plates are printed the combination of the three colors form a picture, which is the exact reproduction of the painting from which it was made.

How and Why I Go To Bed

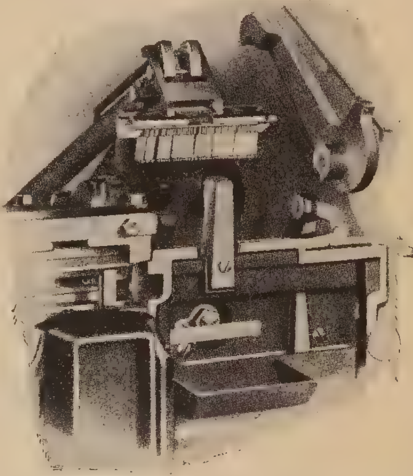
Now it is time to go to bed. To sleep? No, indeed! I'm busiest of all when my electrotype pages are put on the bed of the printing press. Half of them are upside down. Page ten is next neighbor to page twenty-three and so on. Fold a sheet of

How the Type Gets into the Galley



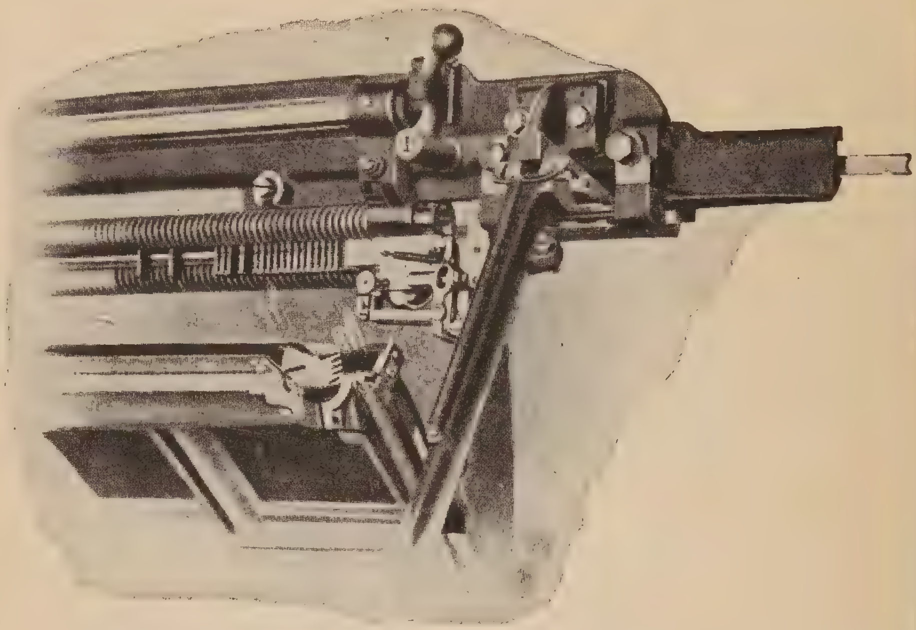
The galley is a kind of tray to hold type after it has been set. The picture shows a number of linotype slugs in one of these galleys and the new one, which has just been cast, as shown in the previous picture, is about to be added.

On the Way Back to Their Pens



Here is a row of matrices on their way back to the distributor which will drop each of them into its pen. They are here shown attached to the distributor bar which is provided with grooves and ribs corresponding to the teeth in the matrices. The matrices are pushed along the bar by a conveyor screw until they reach the point where the ribs on the bar correspond with the teeth in the matrices. Then they let go and drop into the respective channels of the magazine out of which they originally came.

The Little Type Makers Returning Home



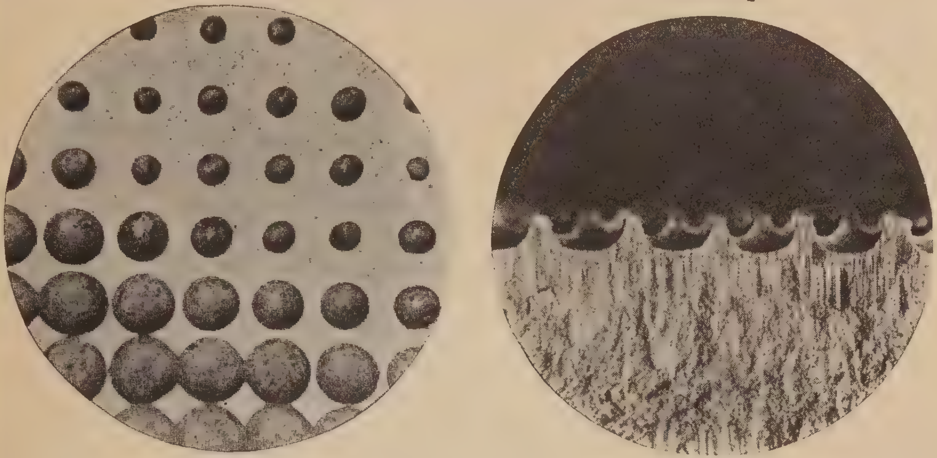
Just watch the little brass molds go home again. Each one has notches like a Yale door key, and the notches on each matrix are different from all the rest. These teeth are in the "V" on the upper end. In the picture you see what seems to be a long screw. This is called the "distributor bar" because it distributes the matrices back into their proper places. The threads or ribs on the bar vary in number and arrangement at different points along the bar, to correspond with the arrangement of the teeth in the matrices. So you see what happens; the matrices are carried along by the screw-like motion of the bar until they reach a point where the ribs on the bar exactly fit into the teeth in the matrices. Then, presto! The matrices let go and drop down into the little pen or channel where they belong, and stay there until they are wanted again.

paper to make sixteen leaves or thirty-two pages. Number the pages, without cutting them, and then unfold the paper and you will see why my pages are laid out this way on the press. Thirty-two of my pages are printed on one side of a sheet and thirty-two on the other side. Printers have to arrange those pages so that when the sheet is folded, the printed plates will be where they belong. On the press bed, I feel like a Chinese puzzle, and am *so* relieved when everything comes out right.

As a sixty-four page form—so they call it—comes from the press it runs between two sharp edged wheels that fit together like the two blades of a pair of scissors. This cutter slices the sheet into two sections of thirty-two pages each—sixteen on one side and sixteen on the other.

When the sheets first come from the press, the ink is not dry and pictures and reading matter would be smudged, if handled. After having been given time to dry, the sheets are taken to a folding machine into which they are fed. At the folding machine a very funny thing happens, for right at the "entrance," so to speak, a pair of steel fingers with rubber cups on the ends of them, like the suction cups on a fly's foot, and working on the same principle, take hold of the edge of the sheet,

The Little Dots Under the Microscope



If you will look closely at certain of the illustrations in Pictured Knowledge, you will note that they are made up of little dots. The two illustrations here given show how these dots look under the microscope. Where the shading in the picture is light the dots are smaller and farther apart; where the picture is darker the dots are larger and closer together. This is very clearly shown in one of our microscope pictures. The picture on the right shows how the half-tone would look if cut through. You see the "dots" stand up and do the printing.

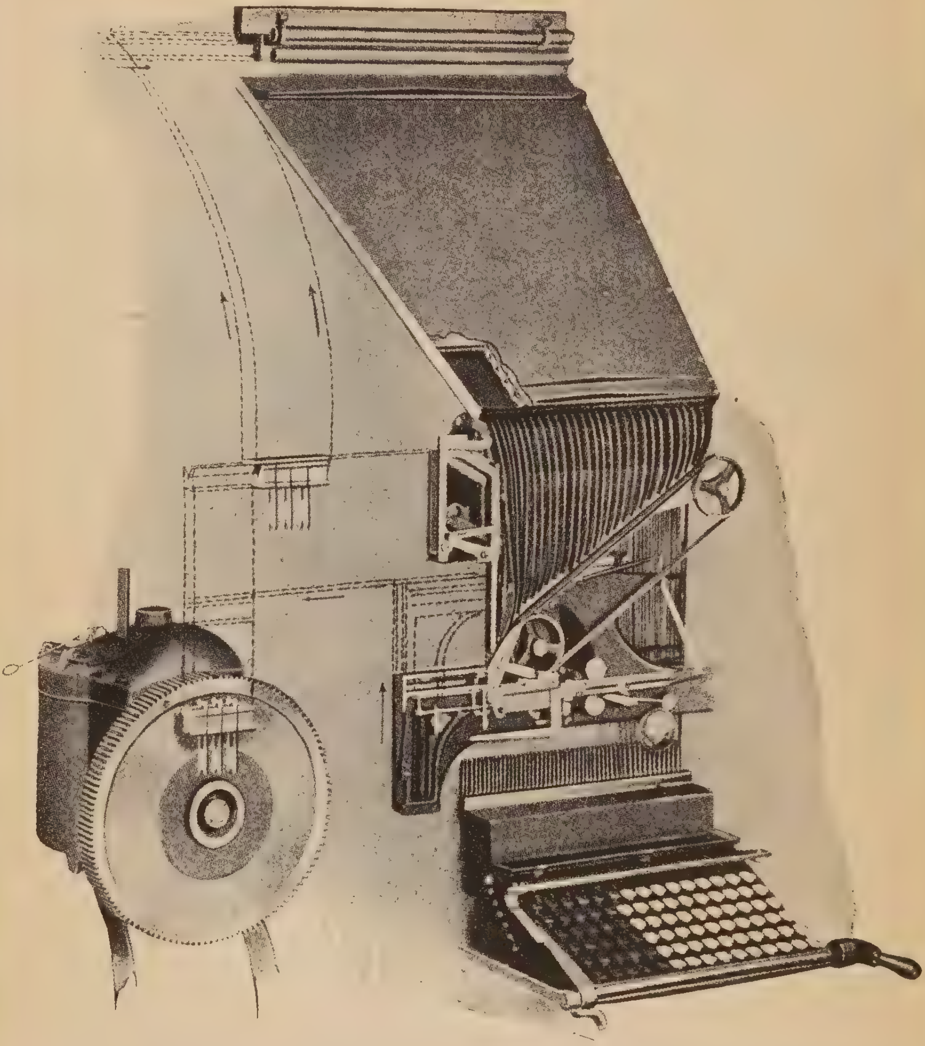
pull it forward and stick it between two webs, running over rollers. The rollers draw the paper in much as the two rollers on a clothes wringer draw in the cloth, and it is carried forward on the webs to a point where the sheet is just above two other rollers.

At this point in the proceedings a frame comes down and pushes the sheet between these rollers which draw it through as you would run a folded cloth through a wringer, thus making a fold. Then the sheet, folded once, passes down to another web, frame, and roller combination, and so on until it has been folded three times, and sixteen pages follow each other as you have them in the book.

Oh, yes, the ink! A five-cent bottle lasts you a long time, but barrels of ink were used on me. And it is thick ink, made of lampblack, oil and varnish, ground in big tanks and mixed with a paddle. For the colored pictures, the inks look like the pots of paint of a house decorator. The ink flows from a fountain at the end of the press. It flows onto a table. It is taken up on big rolling pins, and is spread evenly over the type. Guess what those ink rollers are made of. Glue and molasses. They are soft and elastic as if made of rubber. The glue and molasses were boiled as thick as taffy and poured on wooden cores, in iron molds to harden. The press bed is a moving table. In front, it is inked for every printing. Then it runs under a rolling cylinder with a sheet of paper wrapped around it. The sheet is printed, the table is moved forward for another inking, and the cylinder gets another sheet from the shelf at the back. A boy feeds the press with paper. He pushes a sheet up until some steel fingers reach out, catch the edge and draw it in. Then a sheet is printed, other fingers gently lift it out and lay it aside to dry. When dry the other side is printed.

Molasses, But Not for Candy

Summing Up the Story

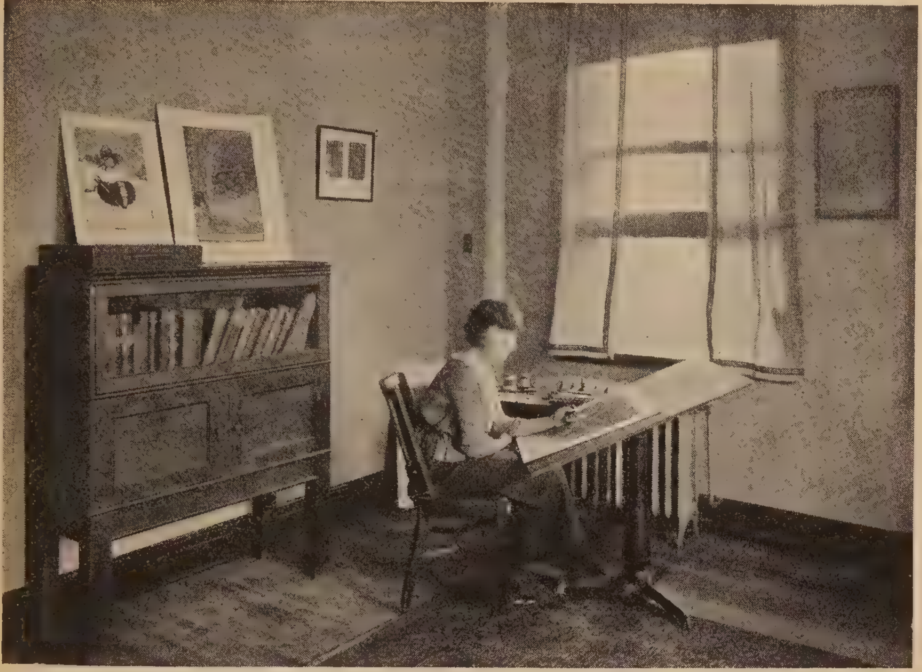


This picture sums up the whole story of the linotype and its work, so that you can see the relation of all the different parts we have been describing. Here, as in a previous picture, the cover of a portion of the magazine is removed so that you can see the "alleys" down which the letters come. The belt which carries the matrices along and lines them up for the casting machine is also shown.

The dotted lines and the arrows show you how the assembled line of matrices, just sufficient to make a line of type of the proper width, is lifted up and carried across and down in front of a slot in the cogged wheel where molten metal is forced through from the melting pot back of the wheel there, into the matrices, and so casts the line of type into a solid bar.

After the bar has been cast, that particular line of matrices is through with that job and so is carried up as you see by the arrows and that dotted line, to the distributor bar at the top of the magazine. This distributor bar causes each little matrix to find its own "pen," as described in the article.

An Artist at Her Work



This picture shows an artist at work in the Art Department of Pictured Knowledge. A drawing, as you see by the one on her drawing board, is made much larger than the reproduction of it which appears in a book, because when working on a large scale, the artist can handle the details of the picture more easily. Resting on the bookcase you will recognize two of the illustrations in the Little Folks' section of Pictured Knowledge. Here you meet the clever artist who drew them, Miss Betty Harris.

Big newspaper presses fold the papers and drop them in a big box.

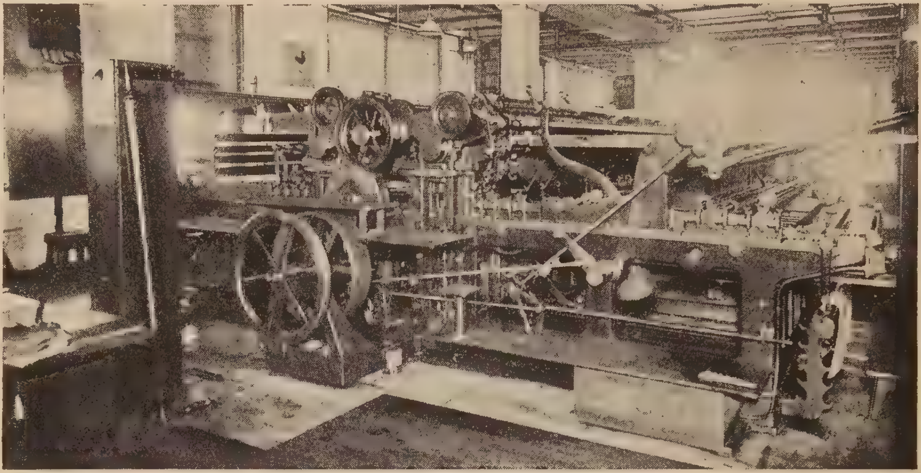
Open me carefully. You can see that I am made in sections of sixteen pages each. All of my sections were gathered up by pretty girls in the book bindery. Then I was put into a "smashing" machine to be squeezed into a solid book. One machine sewed the sections together and another cut the edges. My back was rounded and front hollowed. (Children should be just the other way.) Coarse cloth was glued on the back, with an inch extending over each edge. Then stout paper was glued on. The cloth edges and fly leaves were pasted into the cover.

The whole cover was made by pasting. Then the cloth was put on the sides; all the edges were turned over and glued down and the back lined. Presses made the ridges across the back and pressed in grooves for hinges. This is why it is so easy to open my front door.

A book is like a house. It has a name plate on it, so people will know who lives inside. A special workman put my name on in gold letters. He had a brass die with the name cut in it. He pasted a strip of gold leaf on in the right place, with thin glue, and then pressed the heated die into the gold, cutting around the letters and pasting them down. See my bright gold name plate?

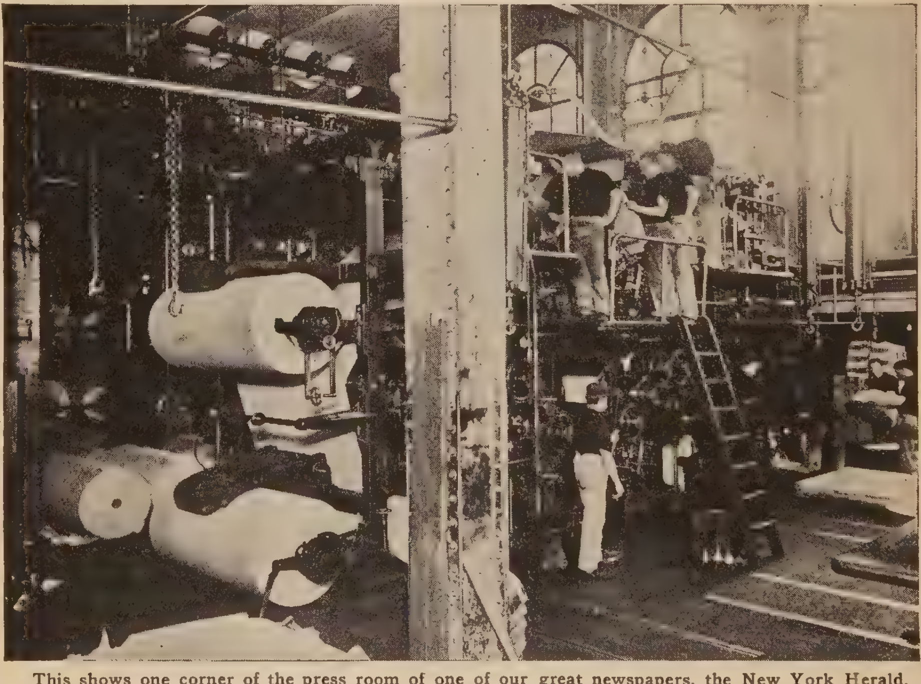
"Pictured Knowledge" lives here. Come on in. The stories and pictures are fine!

The Machine that Does the Printing



Here is a picture of one of the many presses upon which the pages of Pictured Knowledge are printed. On the right hand you see the "rolling pins" which spread the ink over the type. Underneath them is the moving table which carries the made-up type pages. On the left, leaning against the pillar, is another roller ready to take the place of one on the press in case of accident.

In the Press Room of a Great Daily Paper

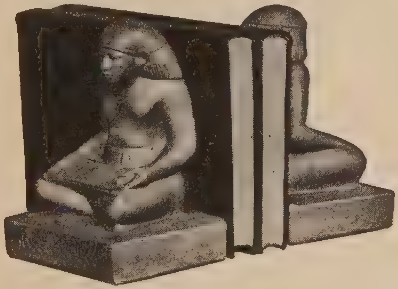


This shows one corner of the press room of one of our great newspapers, the New York Herald, with the men at their posts. The pipes you see convey air used in connection with the hoists for raising those great rolls of paper. The man on the right of the pillar is the "brakeman" who starts and stops the press. The two men on the platform on the top of the stairway are putting the plates on the press. The man back of them with the sheet in his hand is the pressman, who stands in the same relation to the press that the captain does to a ship; he is in general charge. Here you see him looking at a printed sheet which was run off before the men put on the new plates. He wants to see if everything is printing properly.

Books for the Blind and How They Are Read

Just think what a blessing it is that even the blind can read books, although they can no longer see. In books for the blind the letters are raised by being punched into thick paper from the underside. Blind people become very expert in making out the letters by passing their fingers over them. Here in the picture one old gentleman, in an asylum for the blind, is reading to another.

Book History in a Pair of Bookholders



The above picture is a kind of summary of the history of books. It shows an Egyptian scribe with a papyrus roll spread out in his lap, reading aloud. You know it was the Egyptians who first made a kind of paper from the papyrus plant which grows in Egypt. They cut the pith of the plant into long strips, arranged them crosswise in two or three layers, soaked this mat in water and then put it under weights which pressed it into a sheet. You also see where we get our word "paper," don't you?

The Fern and the Moss

There was a fern on the mountain, and moss on the moor;
And the ferns were the rich, and the mosses the poor.
And the glad breeze blew gayly, from heaven it came,
And the fragrance it shed over each was the same;
And the warm sun shone brightly, and gilded the fern,
And smiled on the lowly-born moss in its turn;
And the cool dews of night on the mountain fern fell,
And they glistened upon the green mosses as well.
And the fern loved the mountain, the moss loved the moor,
For the ferns were the rich, and the mosses the poor.

But the keen blast blew bleakly, the sun waxed high,
And the ferns they were broken, and withered, and dry;
And the moss on the moorland grew faded and pale.
And the fern and the moss shrank alike from the gale.
So the fern on the mountain, the moss on the moor,
Were withered and black where they flourished before.

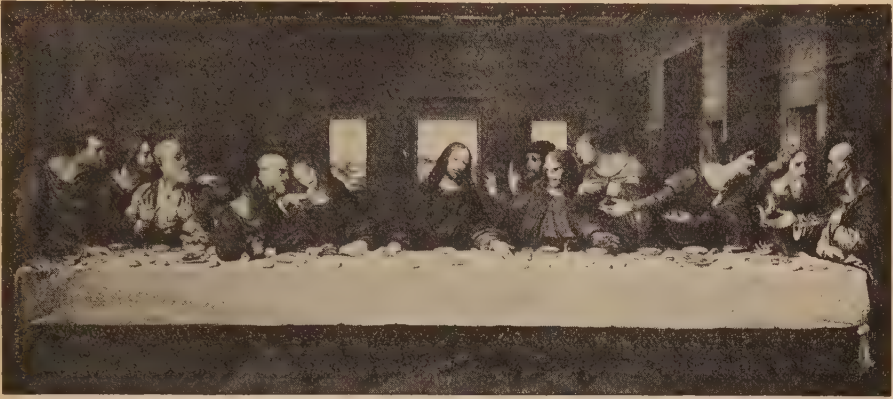
Then the fern and the mosses they grew wiser in grief,
And each turned to the other for rest and relief;
And they planned that wherever the fern roots should grow
There surely the moss should be sparkling below.

And the keen blasts blew bleakly, the sun waxed fierce;
But no wind and no sun to their cool roots could pierce;
For the fern threw her shadow the green moss upon,
Where the dew ever sparkled undried by the sun;
When the graceful fern trembled before the keen blast,
The moss guarded her roots till the storm wind had passed;
So no longer the wind parched the roots of the one,
And the other was safe from the rays of the sun.

And thus, and for ever, where'er the ferns grow,
There surely the mosses lie sparkling below;
And thus they both flourish, where naught grew before,
And they both deck the woodland, and mountain, and moor.

Eliza Cook

Masterpieces of the World of Art



The Last Supper, by Leonardo da Vinci

ART not only speaks the most beautiful language in the world but it often tells in an instant what no amount of words could convey so clearly.

A portrait or a landscape on a wall, for example, really describes the person or the scene represented; describes it so well that no one would think of hanging up a framed description in words in place of either. It is true that some things can be told in words better than in pictures but, on the other hand, there are things in pictures that can not be put into words.

Yet, although it has been truly said that art is a "universal language," and, therefore, a language which everyone can understand, it tells most to those who understand best. So it would be a strange kind of education that taught us only how to read books and nothing about how to read great works of art. And since we get the most out of books when we learn to like the great works of literature, art will enrich our lives in proportion as we become familiar with and learn to appreciate its masterpieces.

In the reproduction of masterpieces in this department of Pictured Knowledge, what are known as the Old Masters are given first, followed by the work of modern painters. Then come the great works of sculpture and famous monuments, including the work of the Egyptians and the Greeks. In the case of the Old Masters and modern artists, the nationality and date of birth are given, so that you can not only study the work of the individual artist, but become familiar with national characteristics in art and observe the changes in style from one period to another, similar to those which mark the development of literature.

That art is only a form of expression is strikingly illustrated in the origin of the famous picture with which this department begins, "The Last Supper," by Leonardo da Vinci. Before he put the painting on canvas, he pictured the scene to himself in words and wrote it down in his notebook. For example:

"One of the apostles is about to drink, but leaves the glass in its place, and turns his head towards the speaker."

"Another whispers in the ear of one who hearkens, bending towards him and holding his ear close to him, whilst in one hand he holds a knife and in the other the bread, which is half cut by the said knife."

These notes are of more than curious interest. They not only emphasize the important relation of art language and word language, but they show us into a great man's mind and we see the care and patient industry with which all good work is done.

A similar practice is illustrated in an anecdote of a modern master of American birth, James McNeill Whistler, whose famous portrait of his mother will be found among these reproductions. Walking in London one evening with a friend, the latter called his attention to a striking effect of a sunset with a sky line of buildings.

"I want that," said Whistler, and stopping, he studied the scene intently for some time. Then turning his back on it he said to his friend, "See if I can recite it," and he described minutely the features of the scene.

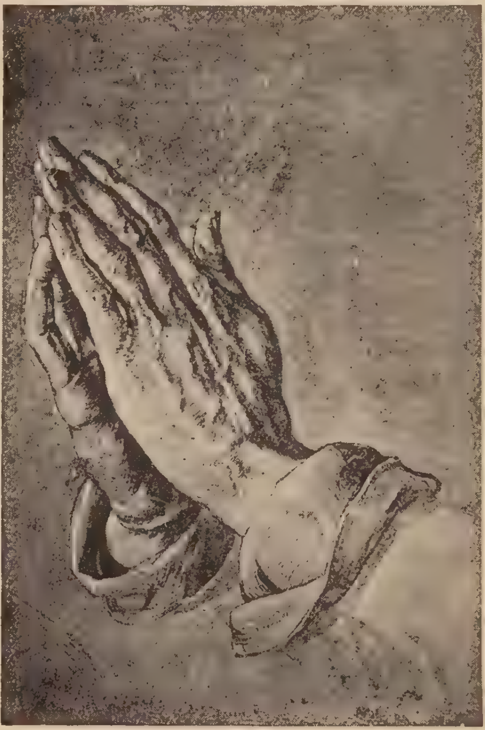
On the way back to the studio his friend called his attention to another view. "No," said Whistler, "one thing at a time." And as soon as he got to his studio he began putting one of his famous "nocturnes" (night scenes) on canvas; the sunset which he had just learned and recited.

You will also find when you are trying to draw something at school or in the little evening group at home, that your picture will be much better if you first describe the object either to yourself or to someone else; as to its dimensions, resemblance of its parts to other forms or objects, etc.

You will also find that the better you learn to draw, following the instructions in our Department on Drawing, the more you can see and appreciate in the work of the masters. It was to develop appreciation of art rather than to make more artists, that the Greeks, the greatest of all nations in art, taught drawing in their schools. They did this that the little Greeks might get the most out of the art which they saw everywhere around them. In sculpture alone this little nation left so many and such marvelous works, that one might suppose that every other boy became an artist, if it were not for the fact that they also produced poets, orators, statesmen, architects, generals, mathematicians, and philosophers—so many and so great.

And the greatness of the Greeks in every line was in no small measure due to the clear seeing and clear thinking which grew out of the fact that art was so intimate a part of their religion and their daily lives. That statue of the "Winged Victory," for example, was a prayer of thanksgiving in marble.

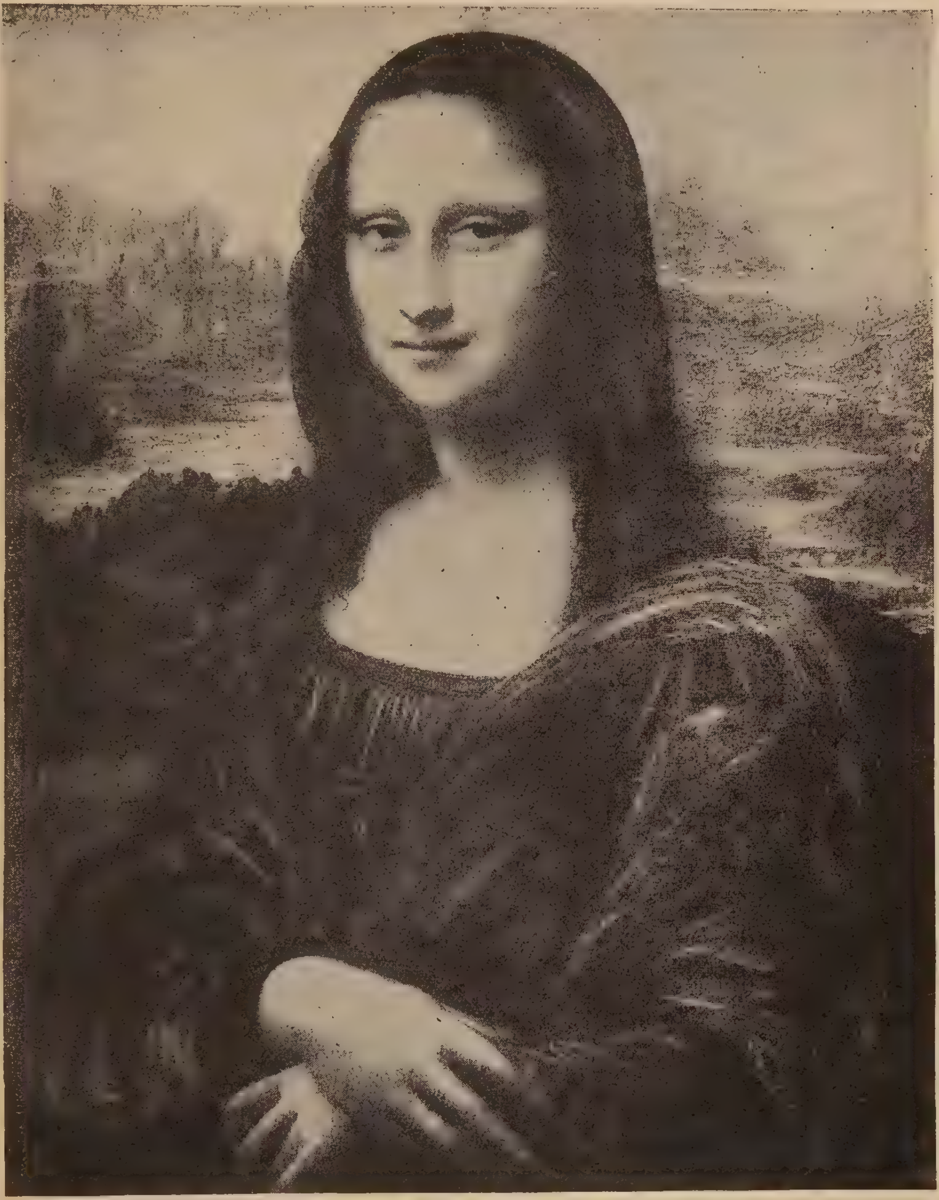
The Praying Hands, by Albert Dürer



Albert Dürer (German, 1471)

LIKE Da Vinci and Angelo, Albert Dürer was a man of many talents—sculptor, architect, painter, and etcher. He was also a man of strong religious feeling and expressed this feeling in the books he wrote, but above all, in his art. Even in the picture of the hands raised in prayer he has put a world of adoration and humble trust. To even draw hands correctly is one of the difficult things in art; and to make them express thought and character, as Dürer does here, is still more difficult.

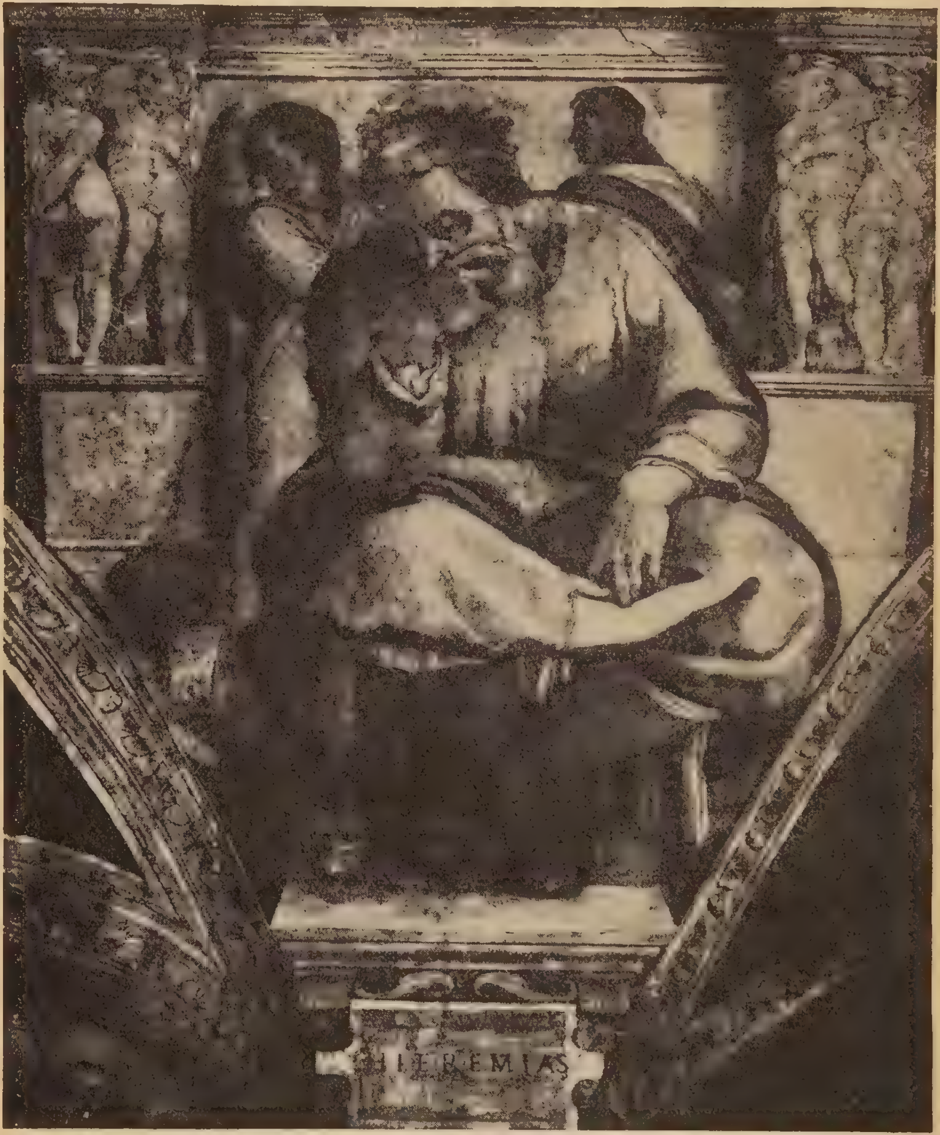
Mona Lisa, by Leonardo da Vinci



Leonardo da Vinci (Italian, 1452)

THIS is one of the most famous portraits in the world. It owes its reputation, not alone to its great artistic merit, but to the mystery in the lady's face. Upon one point the critics are agreed, and that is, that it expresses the painter's ideal of womanly beauty and his conception of the mystery, not only of human life, but of inanimate nature symbolized by the mountains and the grace of the curving stream in the background. While Leonardo was painting the beautiful Mona Lisa, he kept someone near her to sing or play or jest or amuse her, that she might continue cheerful.

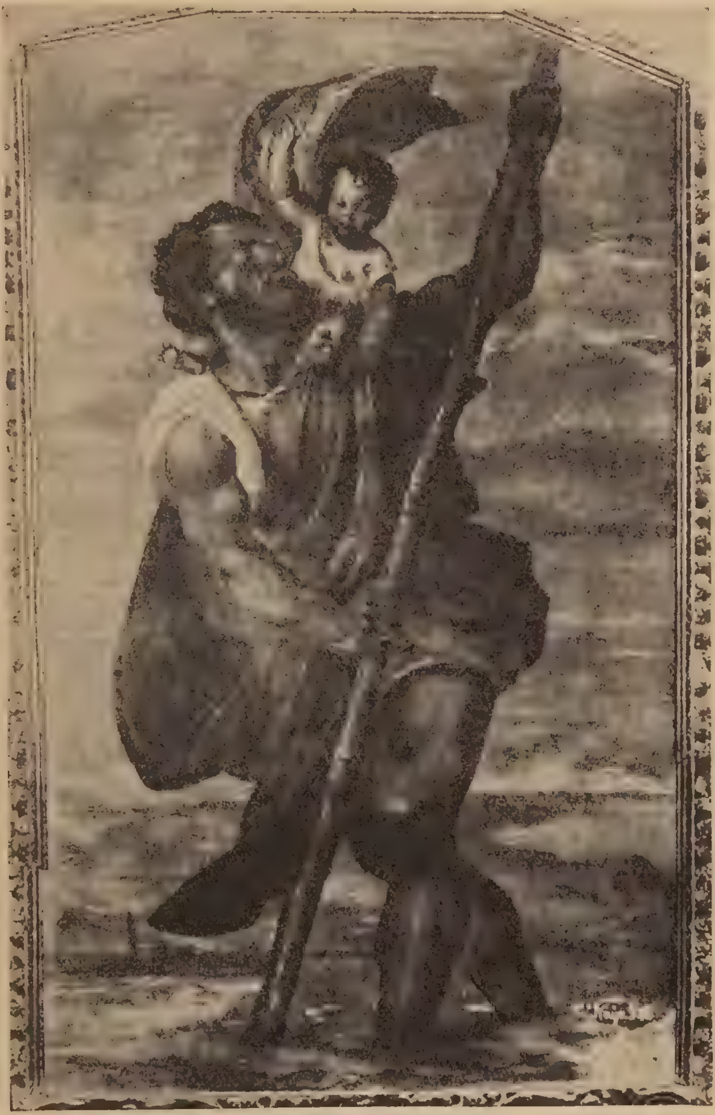
Jeremiah, by Michelangelo



Michelangelo Buonarroti (Italian, 1474)

THIS figure of Jeremiah is one of the seven figures of prophets in Angelo's colossal painting, "The Last Judgment," in the Sistine Chapel. The prophets and also the sibyls, who were the prophetesses of Greece and Rome, and are represented as foretelling the birth of Christ, occupy spaces in the ceiling. The great artist's conception of Jeremiah, who is often called "The Weeping Prophet," is the most striking of all. His profound sorrow over the sins of his people and the calamities that must befall them is expressed in both face and attitude. One of Angelo's distinctions was his perfect knowledge of anatomy, to which he devoted twelve years of study. The fact that he was a sculptor led him to emphasize the muscles in the human form.

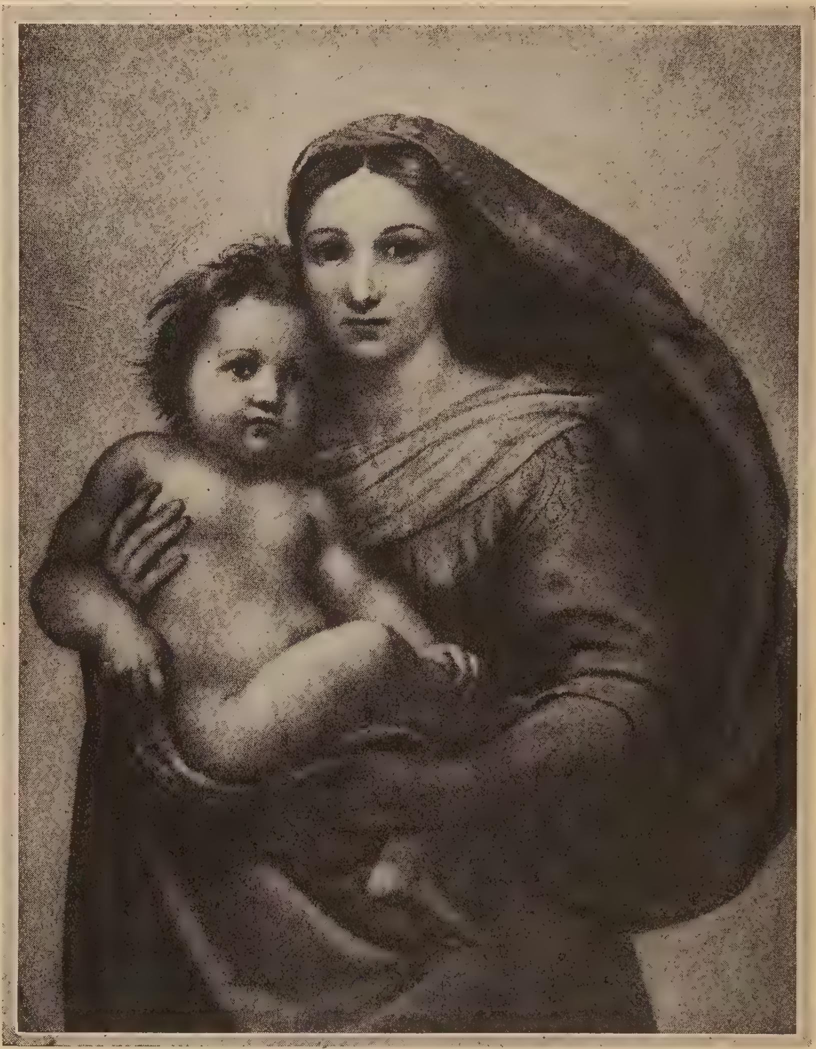
St. Christopher and the Christ Child, by Titian



Titian Vicilli (Italian, 1477)

TITIAN has here told with his brush an interesting legend. St. Christopher's original name was Offerus, and he was the son of a heathen king. He was of extraordinary size, as you can see. He was correspondingly strong, and started out into the world to offer his services to the strongest and bravest. For a time he served Satan, but left him when he saw Satan frightened at the sight of a roadside cross. Later a Christian hermit baptized him and named him Christopher. The name was prophetic, for it means "Christ bearer." One day when St. Christopher was carrying people across a stream, in the service of God, he took a little child on his shoulder, but found the weight so heavy that, giant as he was, he could hardly carry him. This is the episode told in the picture. The child of course, was the Christ Child.

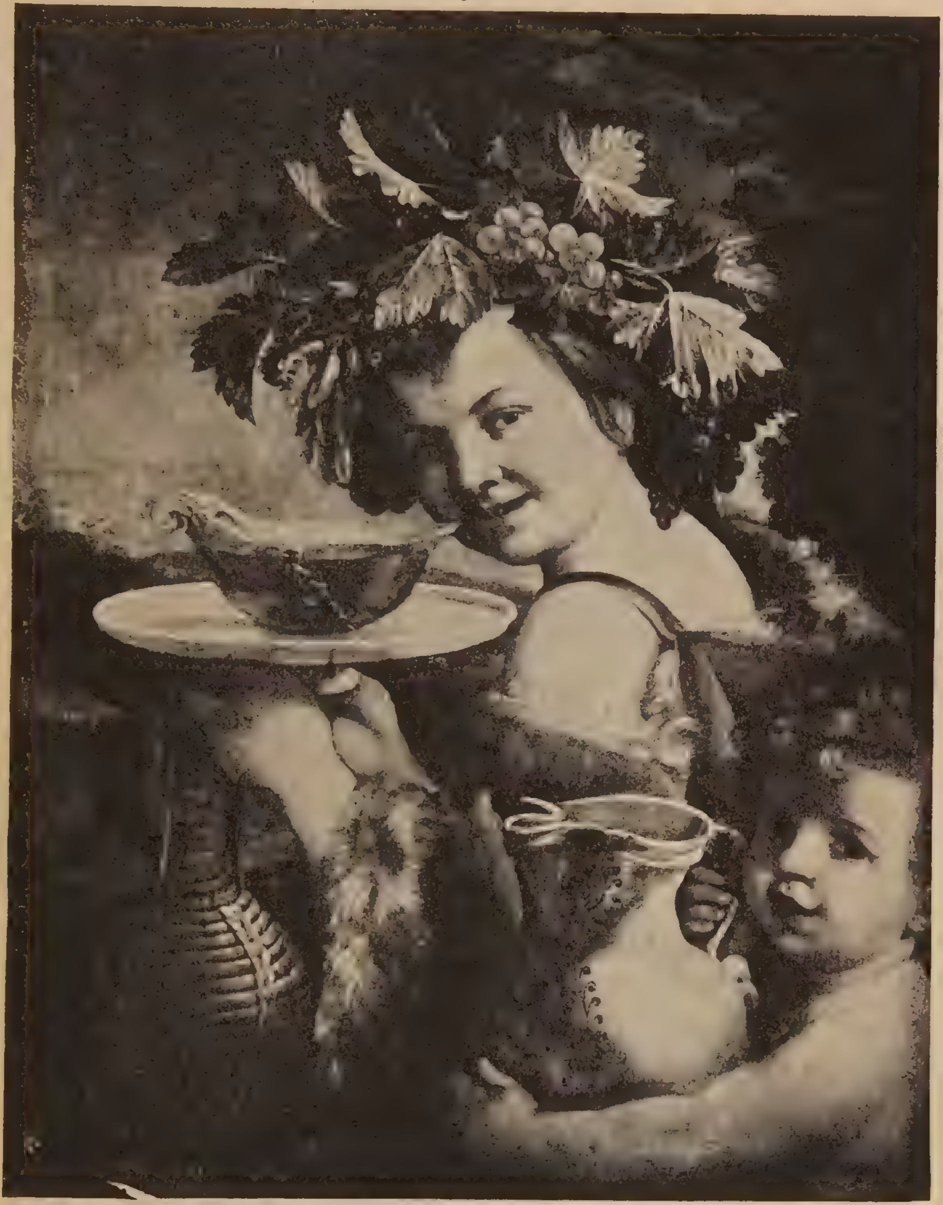
The Sistine Madonna, by Raphael



Raphael Sanzio (Italian, 1483)

THE Sistine Madonna is probably the most famous painting in the world. The great merit of the picture lies in the beauty and purity of the mother's face and the remarkable combination of baby innocence and mature wisdom in the face of the child. The treatment is very simple. Relatively few lines, for example, express the flow of the draperies in the breeze, as the mother advances with the child through the clouds, typifying the fact that she brought the Christ Child to the world. Here we have reproduced the two most striking figures in the painting, that of the Christ Child and his mother. As no sketch is known to have existed for this picture, it is thought that Raphael painted it directly upon the canvas without the preparatory studies of separate figures, which nearly always precedes the beginning of a painting in its final form. Only Raphael's wonderful skill as a draughtsman enabled him to do it.

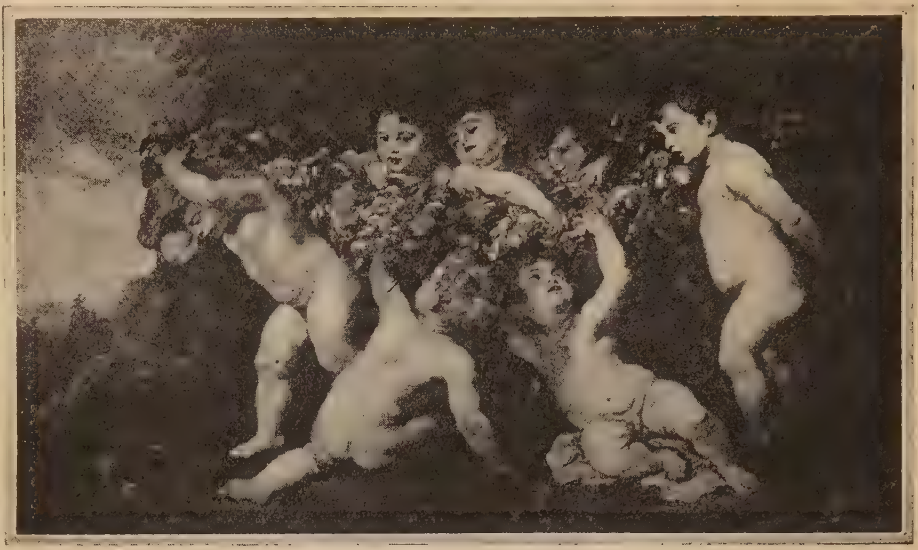
Bacchus, by Guido Reni



Guido Reni (Italian, 1575)

GUIDO RENI owed part of his fame to his skill in painting classical subjects. His masterpiece is "The Aurora," which represents Apollo, the god of day, starting out in his chariot attended by the Hours represented by female figures, after the manner of the Greek myths. The painting here reproduced is his conception of the childhood of Bacchus, the classic god of the vineyard. You notice the little children are crowned with vines and grapes, and their whole attitude, as well as the expression of their faces, tells of the happy time of harvest and the vintage.

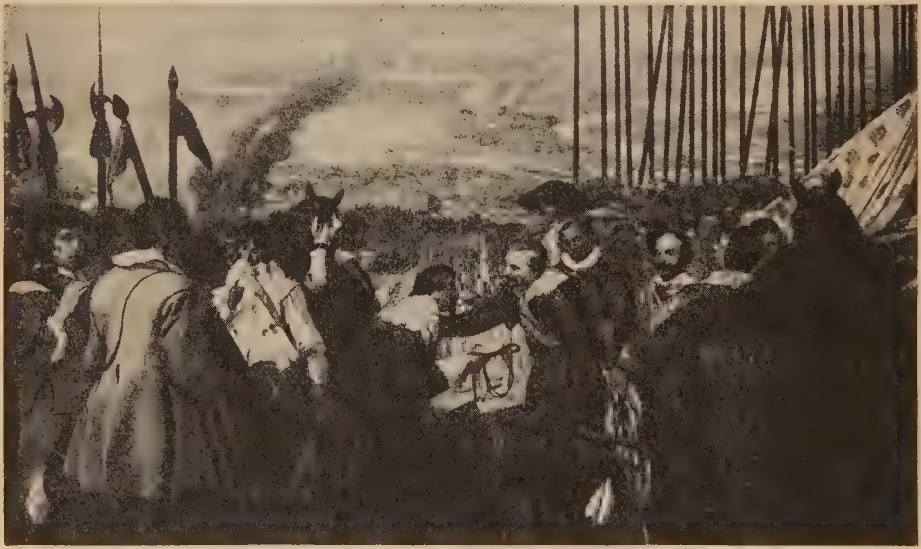
The Garland of Fruit, by Rubens



Peter Paul Rubens (Dutch, 1577)

ANOTHER picture of happy children, symbolizing the fruit time of the year. Notice how beautifully the little figures are grouped to correspond with the shape of the circular garland they are carrying. "Composition" is one secret of great art.

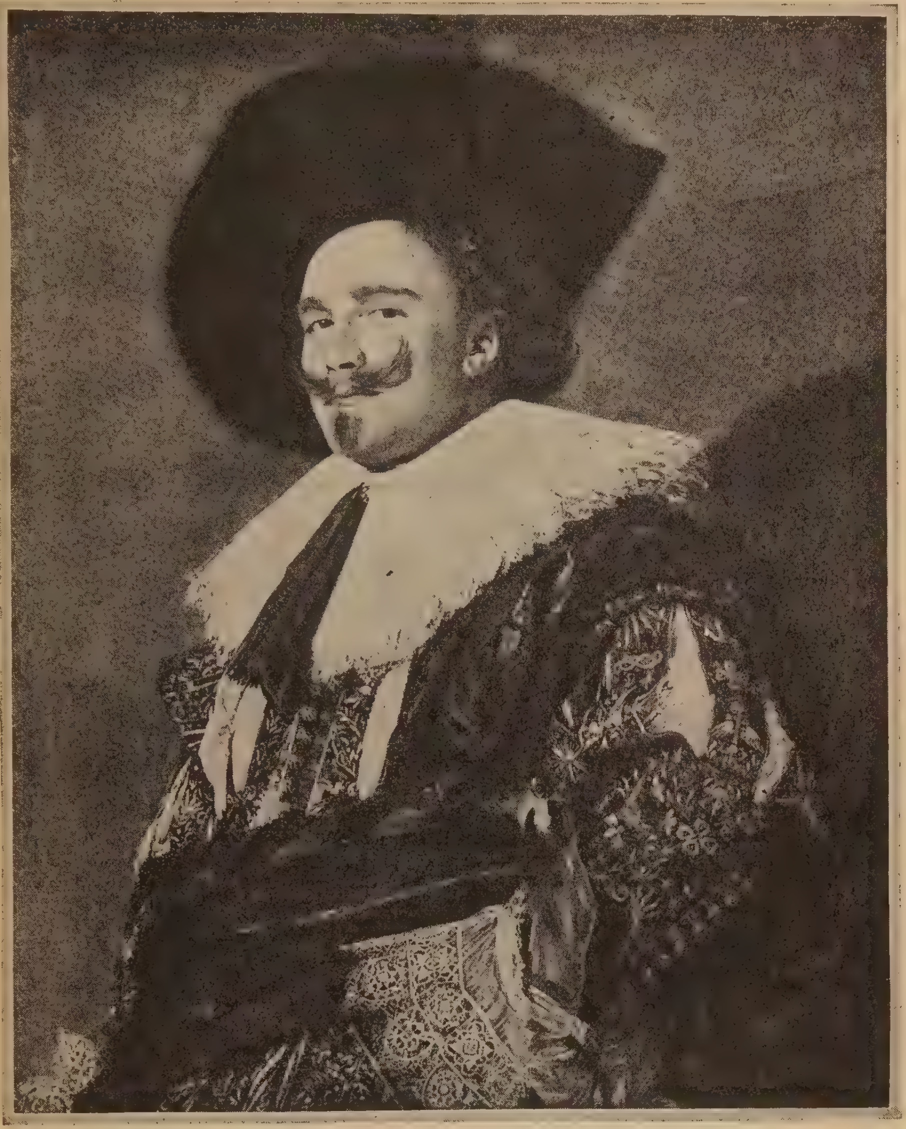
The Surrender of Breda, by Velasquez



Diego Rodriquez de Silva y Velasquez (Spanish, 1599)

VELASQUEZ was distinguished not only as a portrait painter but as a painter of historic subjects. This picture is in the Prado (Royal Picture Gallery) in Madrid. It represents the Marquis de Espanola, a famous Spanish general and friend of the artist, receiving the keys of the city of Breda, which he has just captured. Note that the conqueror treats the defeated general with the greatest courtesy.

The Laughing Cavalier, by Hals

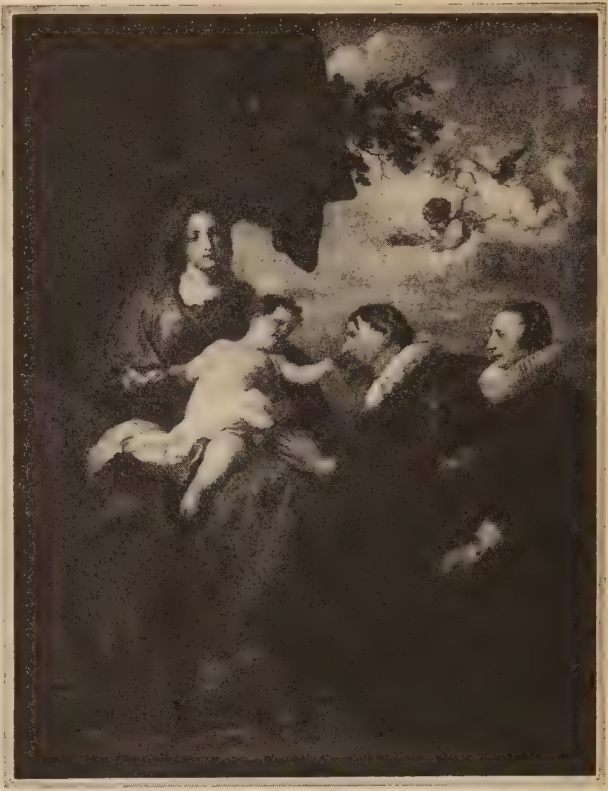


Frans Hals (Dutch, 1580)

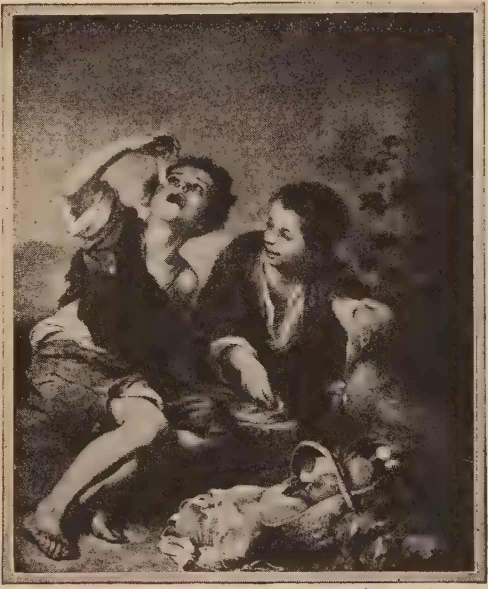
THIS picture has won its fame under the title of "The Laughing Cavalier," although as you can see plainly, the gentleman is not laughing. He has something of a smile, to be sure, but it is a smile of irony. Somebody has apparently told him something—and he means to say by this smile: "You would hardly expect a man of the world like me to be taken in by that story, would you?" People smiling and laughing are among the favorite subjects of the brush of this famous artist. He painted very rapidly and got his results with relatively few quick strokes of his brush. Vandyke was also famous for the rapidity and certainty with which he used his brush.

Madonna with the Donors, by Vandyke

VANDYKE was a pupil of Rubens. He seems to have inherited artistic talents from his mother, who was a skilled worker in embroidery and tapestry. Although he belonged to the Flemish School of painters by birth and training, he spent much time in England, where he painted the King and members of the Royal Family, and got his title of "Sir." The picture "The Madonna with the Donors" is one which was painted as a gift to the Church, and as was often done, the artist included the portraits of the donor and his wife in the picture. The Virgin has the typical face of the aristocrats whom Vandyke was accustomed to paint. The child with one hand holds his mother's finger, and with the other is stroking the cheek of the donor.



Sir Anthony Vandyke (Flemish, 1599)

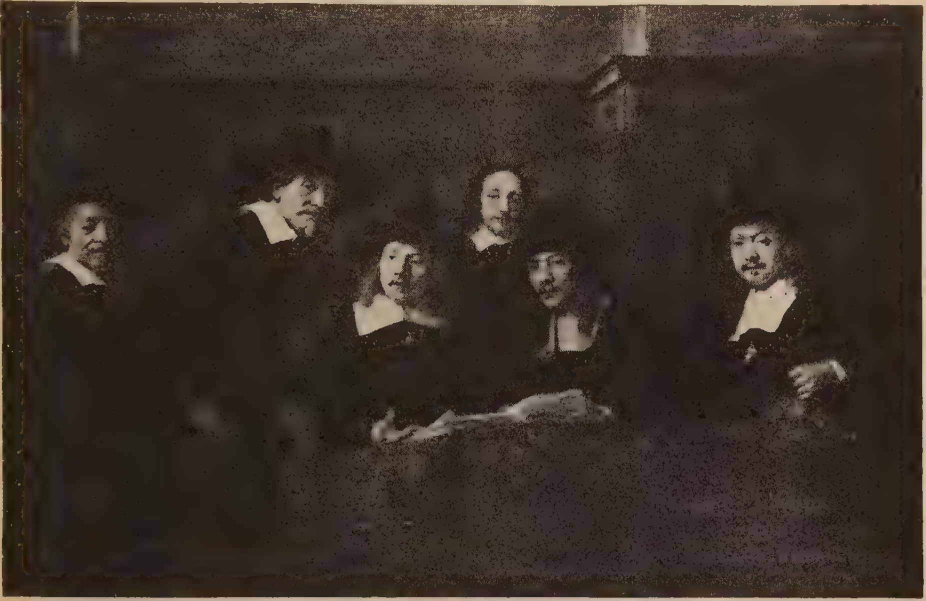


Bartolme Esteban Murillo (Spanish, 1617)

The Beggar Boys, by Murillo

ALTHOUGH equally famous as a painter of sacred subjects, Murillo was very fond of painting the happy-go-lucky street boys of his native country; and particularly boys of the city like those shown in the picture. All these boys were rich and happy because, although they had nothing, they were used to doing without what they didn't have. Enough to eat, a sunny place in which to play, was all they asked of life. Another painting by Murillo called "The Melon Eaters" almost exactly reproduces the figures in this picture. Another shows three little beggars squatting by a ruined wall.

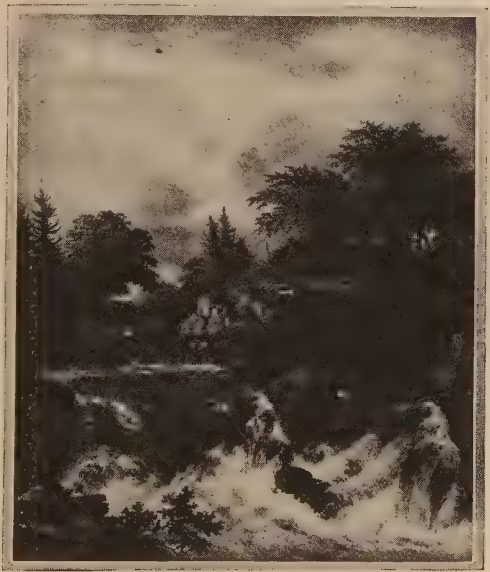
The Syndics, by Rembrandt



Rembrandt Harmens van Ryn (Dutch, 1606)

THIS picture of the "Syndics" (government officers) brings out two of Rembrandt's greatest characteristics—his expression of character and his striking contrasts of light and shadow. On account of this phase of his genius he has been called the "King of Shadows."

The Waterfall, by Ruysdael



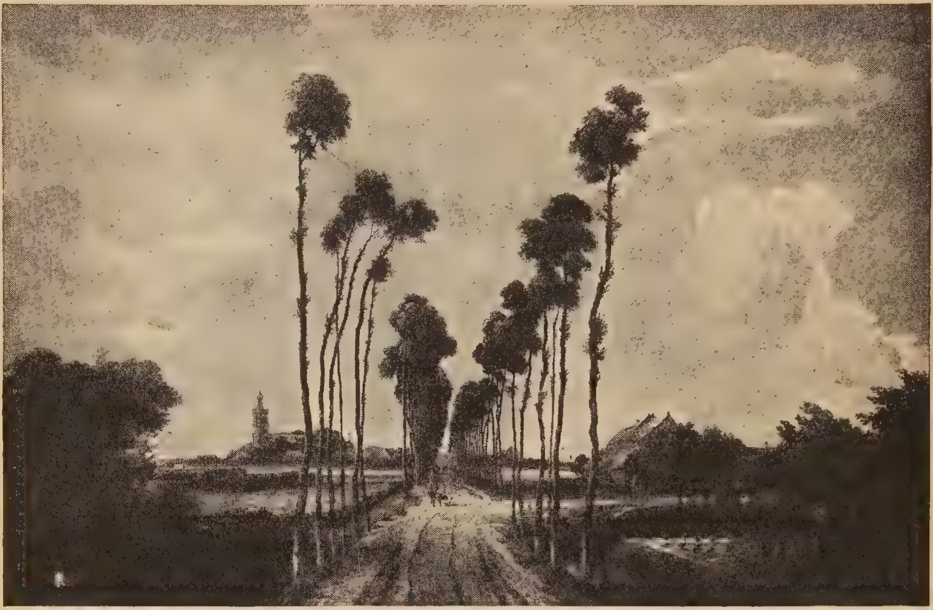
Jacob Ruysdael (Dutch, 1625)

RUYSDAEL was a poet who wrote his poetry with a brush. He expressed the poetry of the woods and sky, and the grace of the waterfalls. Notice the sharp contrast of light and shadow in this landscape and compare it with the handling of shadows in the group of faces in Rembrandt's "Syndics."

His pictures have been called romantic because they suggest all sorts of romantic things—fairies, knights riding forth in quest of adventure—anything you like.

To most people there is also a pleasant feeling of melancholy and loneliness about his pictures. The sense of being alone with Nature is, to everyone who loves her in her various moods, a very agreeable one. A picture of Niagara Falls with a lot of people in the scene, for example, is not nearly so appealing as the Falls alone.

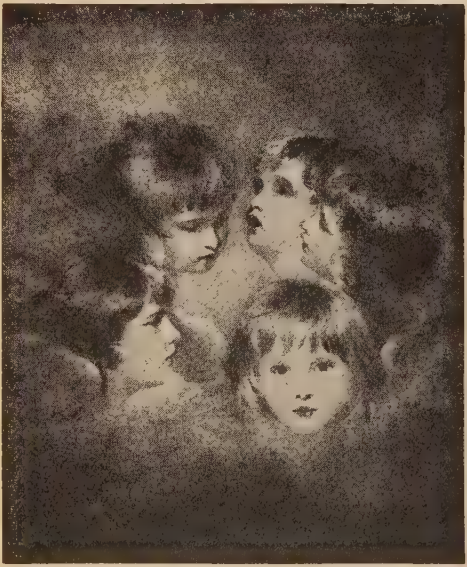
The Avenue of Trees, by Hobbema



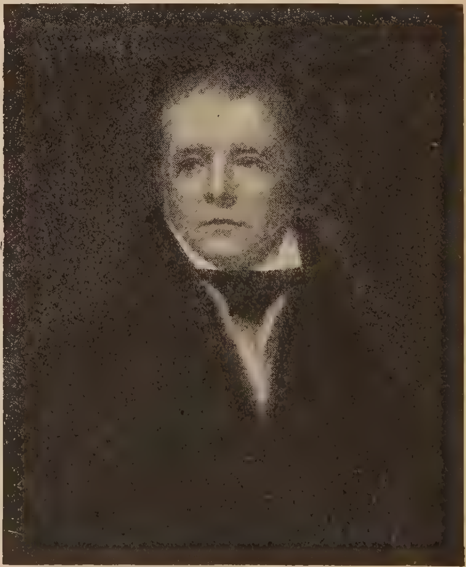
Meyndert Hobbema (Dutch, 1638)

HOBBEMA is another great Dutch landscape artist, and like most distinguished landscape painters, he chose his subjects from his native land. You have only to look at this picture to see that it is the level landscape of Holland.

Work of Reynolds and Raeburn



Angels' Heads by Sir Joshua Reynolds (English, 1723)

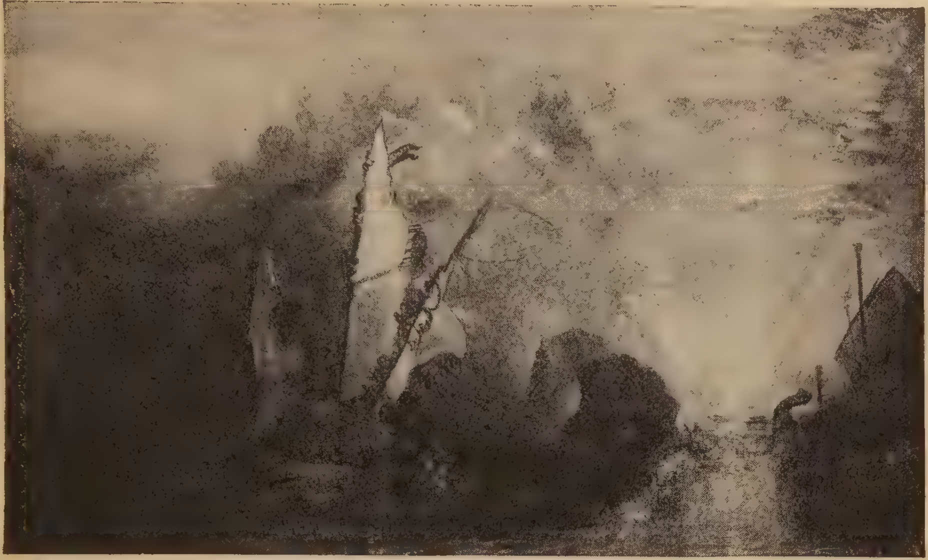


Sir Walter Scott by Sir Henry Raeburn (Scotch, 1756)

REYNOLDS is the most famous of English portrait painters. The picture called "The Angels' Heads" is, in reality, a portrait of little Lady Gordon in five positions.

SIR HENRY RAEBURN was the most famous of the Scotch artists of his time. He produced strong, broad effects by comparatively few swift strokes of the brush.

Ulysses Deriding Polyphemus, by Turner



J. M. W. Turner (English, 1775)

THIS is one of the most celebrated pictures of one of the most famous of all painters of landscapes and the sea, the English artist, Turner. The event referred to in this picture is one you know about from reading the myth stories. Polyphemus was one of the Cyclops --dreadful big giants with only one eye, right where the little girl had that beautiful curl—in the middle of his forehead. Polyphemus lived in a cave on the coast of Sicily, and although he had large flocks of sheep, he also ate people, as did that giant Jack killed. Odysseus returning from Troy, landed on this coast with his companions and Polyphemus had shut them all up in a cave to keep for his meals, blocking the cave with a big rock. But Odysseus, who had a great deal of practice in getting out of the troubles into which he was constantly falling, put out the giant's eye while he was asleep. Then he and his companions hurried down the shore to their ships. But they had just fairly started when Polyphemus, blinded as he was, made his way to the shore, and proceeded to hurl a big rock down where he thought they must be. As he could no longer see to aim straight, however, neither Odysseus, nor his companions and ships, were touched and Odysseus mocked the furious giant as they rode away on the sea. According to Homer, this is what he is saying in the picture: "Cyclops, if any mortal man asks you the story of the blinding of your eye, say that Odysseus made you blind." The arched rocks you see in the picture are the ones you have noticed often in the reproduction of the painting of the island of Capri, used in your picture studies in school. "Ulysses" is the Roman name for Odysseus and Turner chose it in naming his picture.

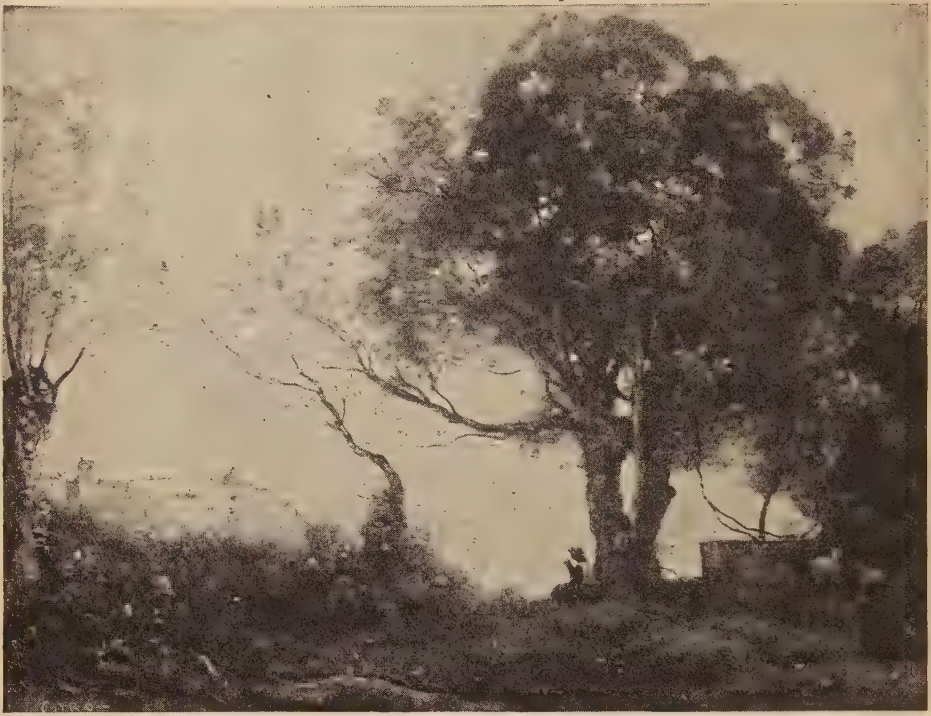
A striking feature of Turner's work is the blazes of colored light such as you can see suggested in the sun's rays here. Ruskin, the great English art critic who did more than anyone else to make Turner famous, has this to say of the sky in this picture:

"The whole heaven—one scarlet canopy—is interwoven with a woof of waving flame, and tossing, vault beyond vault, as with the drifted wings of many companies of angels. . . . When you can look no more for gladness, and when you are bowed down with fear and love of the Maker and Doer of all this, tell me who has best delivered this, His message unto men!"

Turner contributed 259 pictures to the Royal Academy, and over 19,000 drawings and sketches were mounted and arranged by Ruskin. His illustrations of the poems of Rogers, Byron, Scott, and other authors are well known. Among his paintings are Dutch Boats in a Gale, Falls of the Clyde, Sun Rising through a Mist, The Fighting Temeraire, Bay of Baiæ and Childe Harold or Modern Italy.

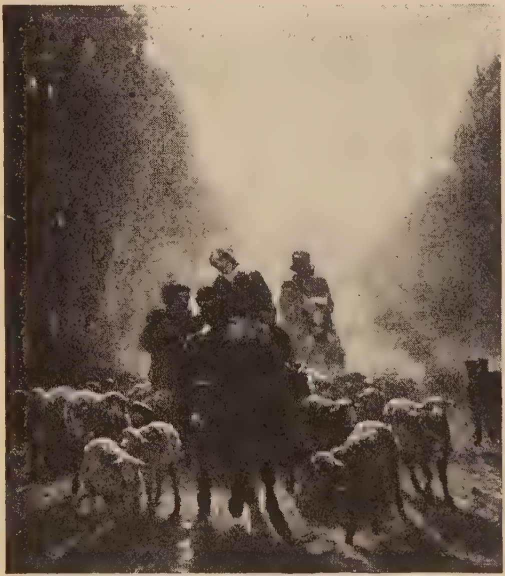
His large fortune was left to found a home for needy artists. Wasn't this a fine thing for a great artist to do?

Castle Grandolfo, by Corot



Jean-Baptiste Camille Corot (French, 1796)

THERE is always a spirit of joyousness about Corot's paintings that reminds one of the song of birds in spring. And they nearly always have a suggestion of the air and the light and the odors of morning. It was always at the very earliest morning hours that he went out to paint. Indeed, he thought getting up early in the morning was one of the most delightful things anyone could do. Once in a letter to a friend he said, "The landscape painter's day is delightful. He gets up at three in the morning, before sunrise, and watches the way everything trembles in the freshing breeze of dawn."

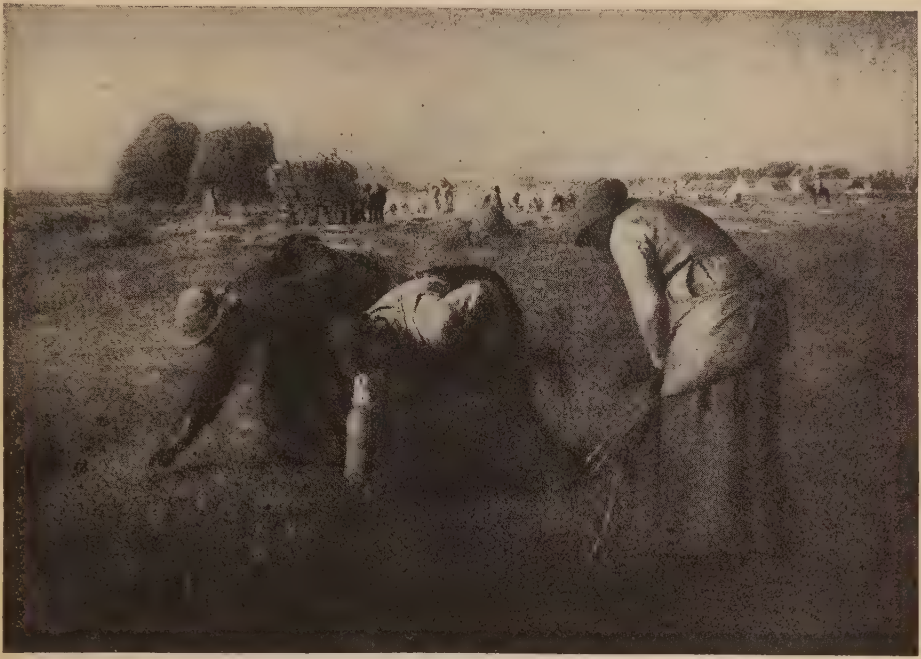


Constant Troyon (French, 1810)

Returning from Market, by Troyon

LIKE Corot, Troyon was a great French landscape artist, but unlike Corot, he made figures of people and animals prominent features of his pictures. He also loved the morning and evening lights and their long shadows. As one critic says, he had "a quick sense for light." In the picture here produced, the light is from the setting sun, as the farmer and his wife and boy are returning from market. Like many other artists, Troyon seldom completed one subject before he took up another, working on a number of pictures at the same time and passing from one to another as a thought occurred to him.

The Gleaners, by Millet



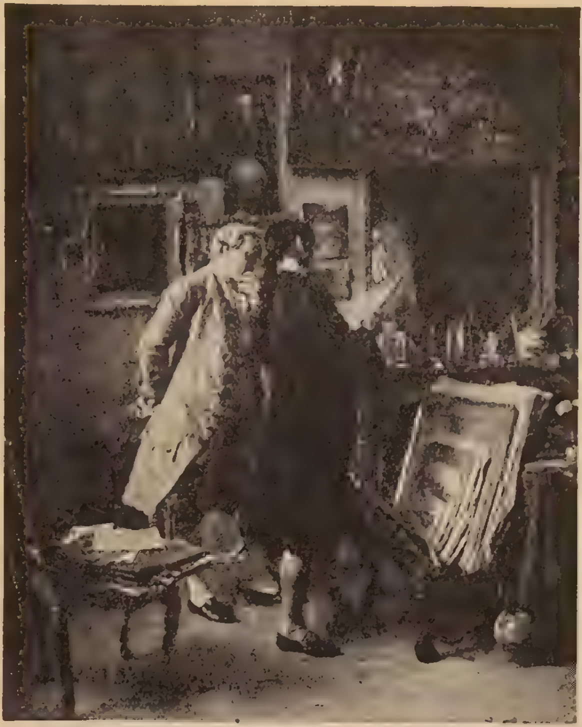
Jean Francois Millet (French, 1814)

NO ONE has expressed the life and simple dignity of the French peasant so well as Millet. He was himself a farmer boy, and this picture of "The Gleaners" is one of his most famous works. Like Angelo, he was a close student of the human form. Notice how forcibly he brings out the shape and movements of the body here. The figures, although clothed, look like moving statues.

Although in the beginning of his career he painted classical subjects, he soon abandoned this field and devoted the rest of his life to painting scenes in the lives of the peasants of France. His pictures give a complete study of the life and character of the French peasantry which it would take several volumes to explain if the same subject were dealt with in print. Millet's work differs from other famous artists, such as Jules Breton, who also devoted themselves to painting the lives of peasants. You no doubt know Breton's "Song of the Lark." Breton put a good deal of poetic sentiment into his pictures, while another famous painter in this field, L'Hermitte, expressed the protest against a state of society in which people toil so hard and get so little out of life. Millet, however, simply painted the peasant as he is, without any comment one way or the other.

Millet used to amuse his children and his grandchildren by making little sketches. They are comparatively crude, as are the first sketches made by an artist when compared with his finished work. One of them shows a child trying to blow out a candle. It was made for the artist's first grandchild before he could talk. Millet used to draw many things in this way to see if the baby could recognize them. When he made this sketch and showed it to little Antoine, the baby looked at it for a moment and then turned and blew at a candle which was standing on the table. The candle is shown very large in proportion to the human figures. It was made large to attract the baby's attention. In commenting on it to an American who was visiting him, Millet said, "This well illustrates a principle in painting. It is necessary to exaggerate or to bring things out in strong relief at times in order to produce the proper effect."

These sketches were made with a match dipped in ink so that the lines would be good and strong.



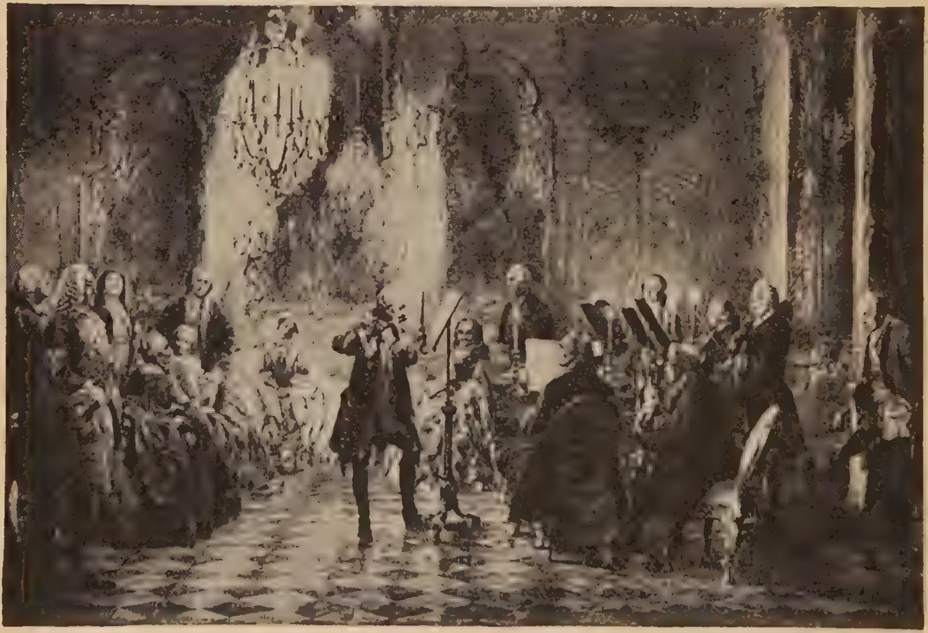
Jean Louis Ernest Meissonier (French, 1813)

The Print Collector, by Meissonier

THE art of Meissonier and Millet dealt with entirely different subjects and there is an equally striking contrast in their methods. Millet got his results with a few simple strokes, while Meissonier's work is distinguished by its incredibly minute detail. Most of his pictures were painted on very small canvases, and the detail is brought out with the minute accuracy of a photograph. No one has ever excelled, few have ever approached him in his chosen field. Nearly all his paintings are military scenes. His masterpiece, "Friedland—1807" is in the Metropolitan Museum, New York City.

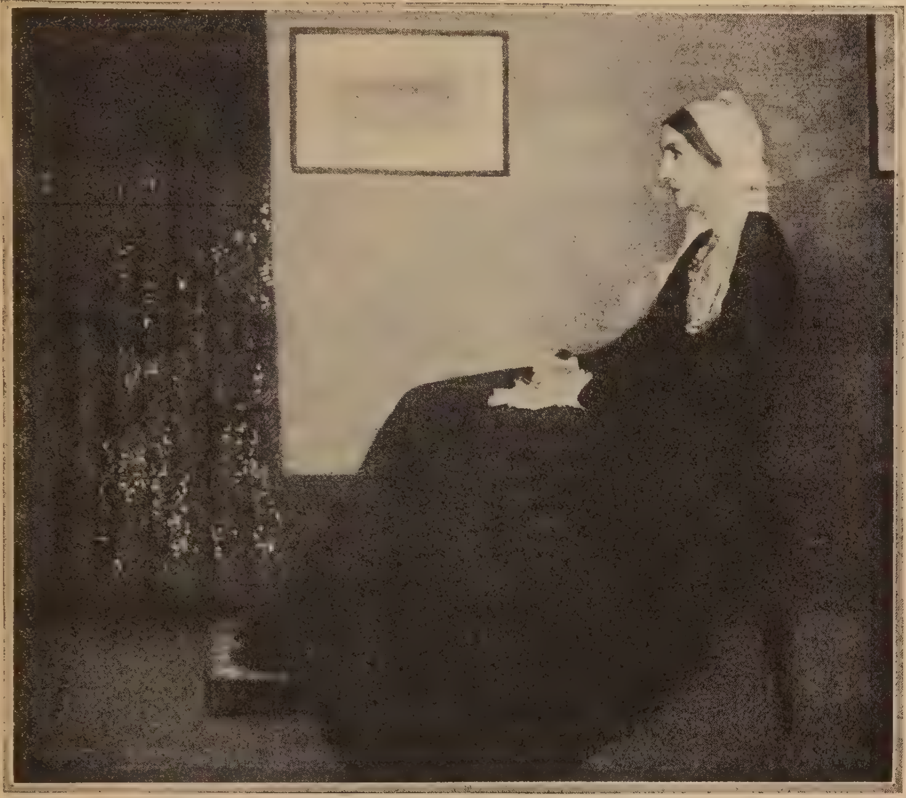
Menzel, a German artist, an example of whose work appears below, was also distinguished for the detail in his pictures and his work has been compared by the French critic, Michel, to that of the French masters, which is the highest compliment a French critic could pay.

A Concert at the Court of Frederick the Great, by Menzel



Adolf-Friedrich-Erdmann Menzel (German, 1815)

Whistler's Portrait of His Mother



James McNeill Whistler (English, 1834)

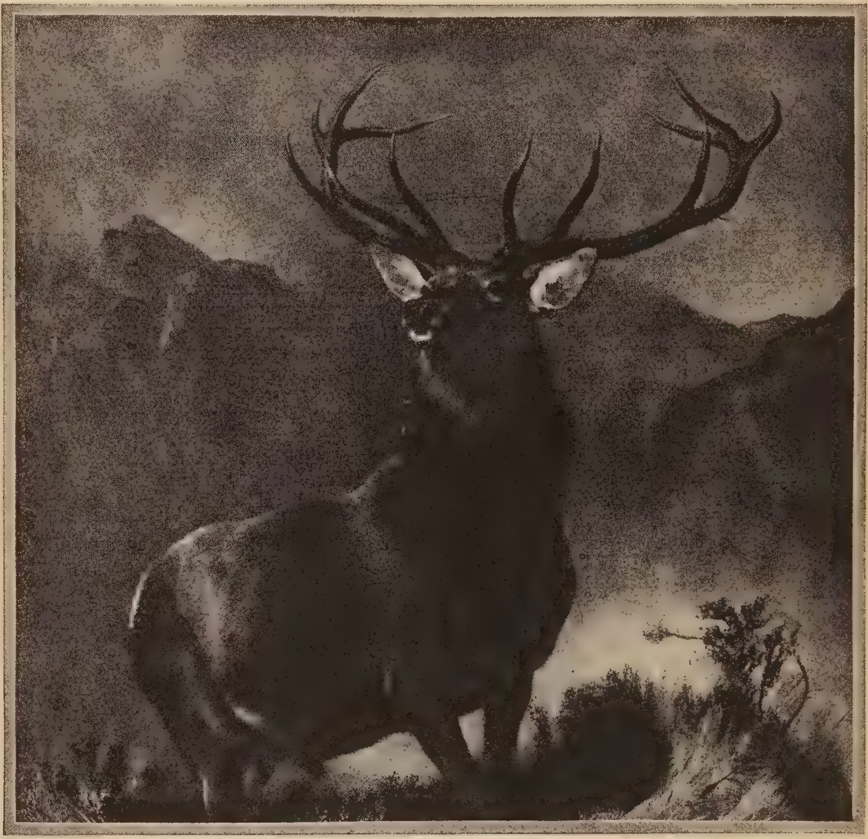
ALTHOUGH Whistler was born in America, he spent his art life in England and so is classed among English painters. He was a painter of landscapes, of portraits, a decorative artist, and an etcher. In all these lines he ranked among the first. His portrait of his mother is one of the most famous of the world's great pictures. It is extremely simple in arrangement and treatment. The face wears the dreamy expression of those who live rather in the past than in the present. Joseph Pennell, the famous American etcher, speaks of the expression of resignation in the tired old folded hands. The face is wise and strong, full of courage and resource, and at the same time of tenderness, piety, and resignation. Only writers and artists can fully appreciate what infinite toil is required to reach the simplicity of this picture. It seems to express the beauty of motherhood, like the one word "Mother"—without adjectives and florid sentiment. Not a touch is wasted and there is no trace, except to those who know how long it takes to write a short letter, of the amount of work really expended on it.

Whistler was deeply attached to his mother, and her influence was a dominant feature in his life. To the public, one of Whistler's characteristics was his cynicism; but in this picture he takes off the mask and shows us the real man. One of his biographers relates how once when he was visiting Whistler, they stood together looking at this picture. "I spoke at length," he says, "of the beauty of the face and figure. For some time Whistler said nothing, his hand was playing with the little tuft that he wore on his lower lip. Finally he spoke.

"'Yes,' very slowly and very softly, 'one does like to make one's Mummy just as nice as possible.'"

It was because Carlyle liked this picture that he himself consented to sit to Whistler.

The Monarch of the Glen, by Landseer



Sir Edwin Landseer (English, 1802)

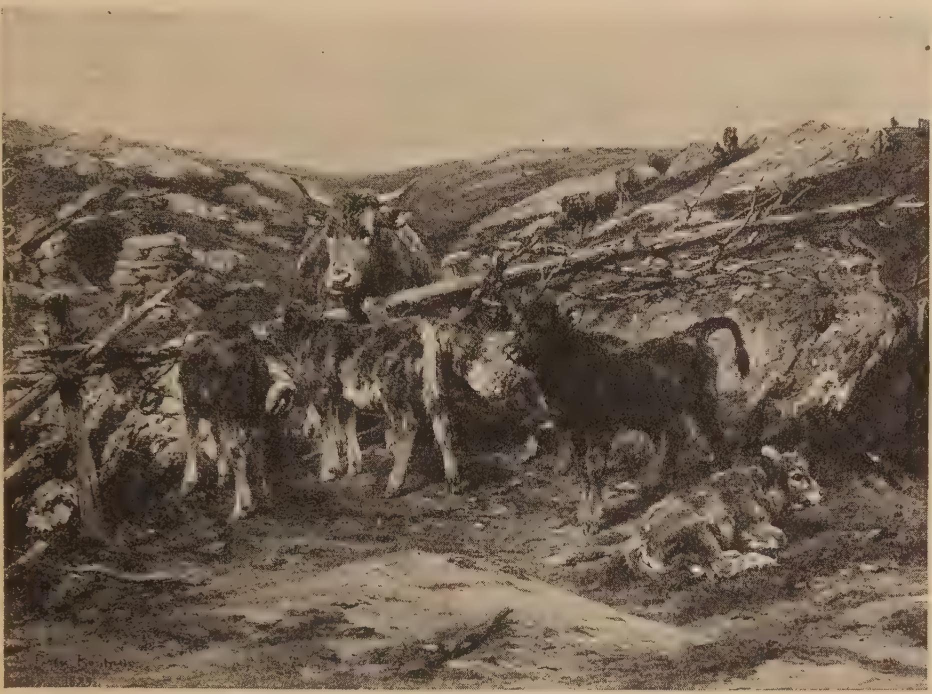
LANDSEER, like Rosa Bonheur, devoted his life to the painting of animals, and the deer in his native haunts among the wild mountains of Scotland was one of his favorite subjects. "The Monarch of the Glen" shows a magnificent stag with his head thrown back, in the characteristic way, looking about for signs of danger or the presence of a rival. Behind him are his native crags and the Scotch mists. What an air of wildness and solitude the artist has put into this picture. Another painting of a deer, which is full of pathos and offers a bitter comment on the kind of sport which finds pleasure in hunting and killing these beautiful creatures, is called "The Sanctuary." A stag, desperately wounded, is just struggling up on the shore of a lake which he has swum across to reach an island where he will be safe, for a time at least, from the cruel hunter and cruel dogs. The scene is at twilight and you can see the evening glow along the low-lying hills. Another picture shows a stag in the dead of winter, with snowy mountains all about him and the stars glittering overhead, calling a challenge across a lake to one of his rivals. "The Deer Pass" shows a group of deer among mountain peaks and morning mists.

Landseer was perhaps even more famous as a painter of dogs; not because he painted them any better, but because he painted so many pictures of dogs and brought out so many phases of their noble lives.

Of his picture "The Highland Shepherd's Chief Mourner," which shows a shepherd dog with his head resting on his master's coffin, Ruskin says in his "Modern Painters":

"[It is] one of the most perfect poems or pictures (I use the words as synonyms) which modern times have seen."

Weaning the Calves, by Bonheur



Rosa Bonheur (French, 1822)

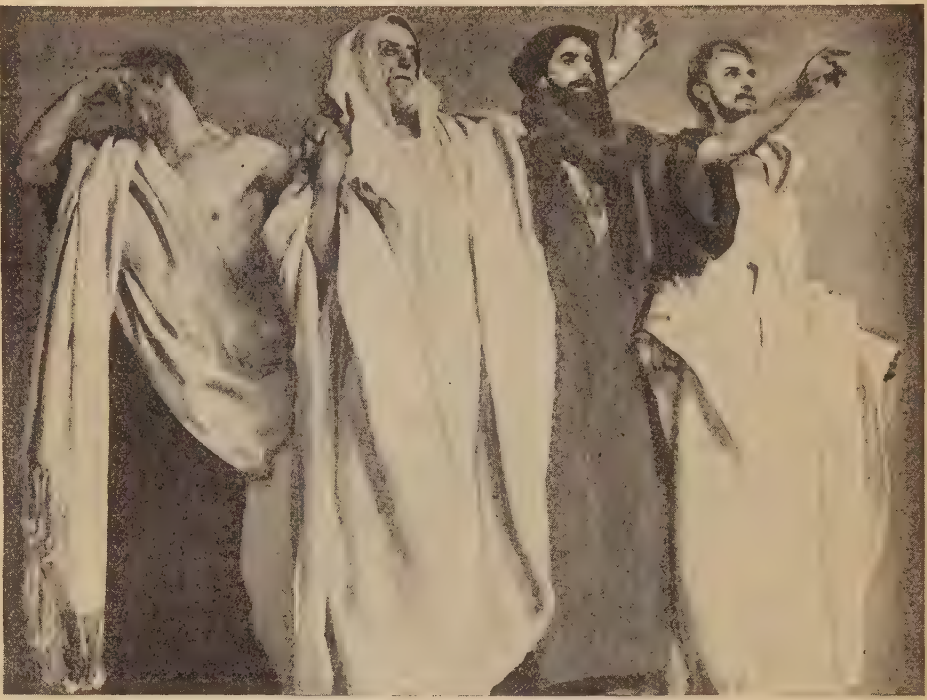
ROSA BONHEUR shares with Landseer the distinction of being the most famous of animal painters. She came of an artistic family. She was the oldest of four children, all of whom were artists and all devoted their art to animals. Auguste painted both animals and landscape. Juliette painted animals and Isidore was a sculptor of animals. Rosa's father, who was also an artist, taught her to draw. Her work was extremely accurate and also as a critic put it, "manly and firm." The work of women artists is often delicate and hesitating. Wherever she introduces human figures into her pictures, there is a marked difference in treatment, the figures being treated as if they had comparatively little interest for the artist. Painters, like the rest of us, are apt to emphasize in their work what interests them most, and are strongest along the lines of their enthusiasm and comparatively weak in other things. Landscape artists, as we have seen, often treat figures as mere incidents or like Hobbema, get other artists who are better at figures to put them into their landscapes. Claude, a famous French landscape artist, used to say that he sold his landscapes and gave away the figures.

Although France has produced many distinguished painters of animals, Rosa Bonheur is given first place by most critics. An American critic, S. G. W. Benjamin, in comparing her work with that of Troyon and Landseer, says there is the same intense observation and sympathy with nature, the same vigor of treatment, and that she has "more refinement than Troyon with rather less power, but more power than Landseer, so far as the representation of cattle is concerned."

The studio of the Bonheurs in the suburbs of Paris has been described as "a veritable Noah's ark with its menagerie of birds, hens, ducks, and sheep." Every day the two boys took the sheep from the apartment down the six flights of steps and to the plain of Monceau where they could pasture. Later when the family had a larger income, they moved to a beautiful residence in the fashionable part of the city and a place was hired for the animals in the suburbs.

When Rosa Bonheur began to paint, it was so unusual for a woman to do such things, that in visiting the slaughter houses of Paris where she could see cattle, she dressed in men's clothes and wore her hair short to protect herself from the ill-mannered curiosity of the workmen.

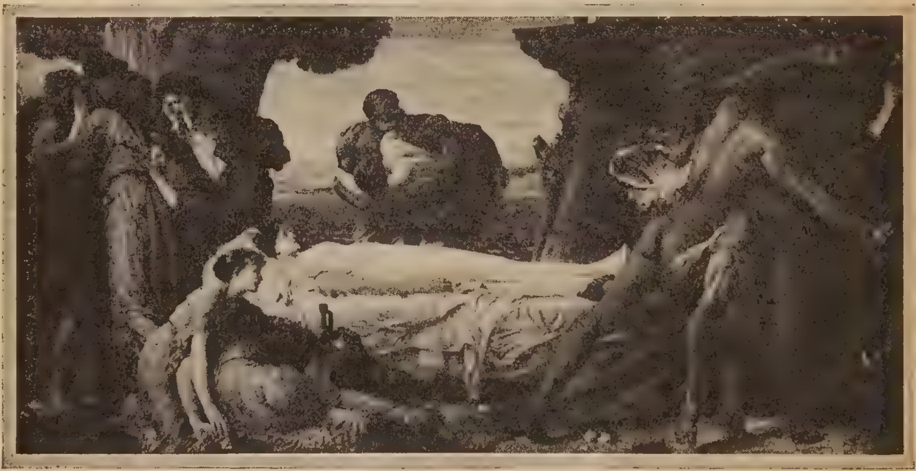
The Prophets, by Sargent



John Singer Sargent (American, 1856)

ALTHOUGH the art life of America is too short to have produced many artists, it has produced a few who rank among the very best, and Sargent is one of them.

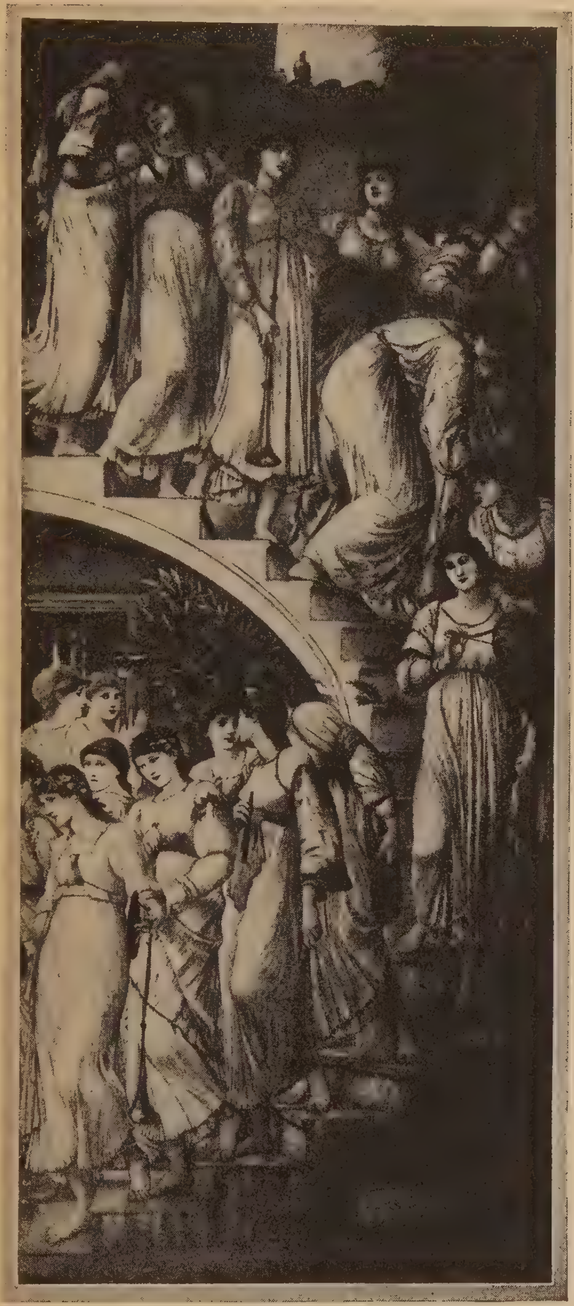
Hercules Struggling with Death, by Leighton



Sir Frederick Leighton (English, 1830)

IT IS said that no one since the days of the Greeks themselves has succeeded in entering so thoroughly into the classic spirit as Sir Frederick Leighton. Most of his paintings—certainly the most famous ones—are scenes from Greek life and Greek myths. This picture represents Hercules struggling with Death for the possession of the body of Alcestis. Notice that there is nothing hideous about the face or figure of Death.

The Golden Stairs, by Burne-Jones



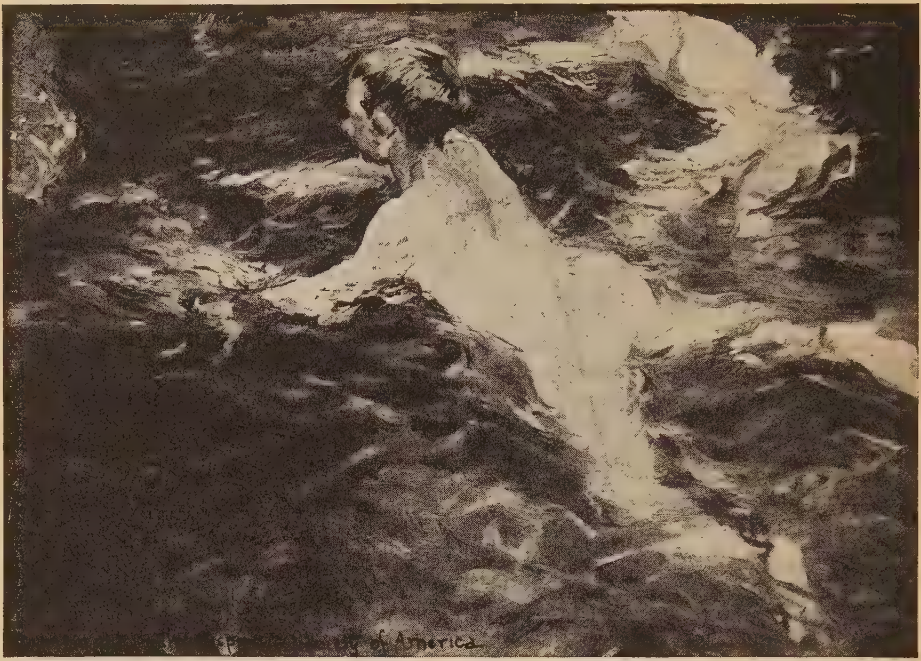
Edward Burne-Jones (English, 1833)

BURNE-JONES not only painted poetry as so many painters do, but he was a highly idealistic poet and painted scenes, not of this world but of a world of beauty of his own creation. Sidney Colvin, an eminent English critic says: "A flower painted by Burne-Jones is like a flower described by Keats; all the fragrance and color and purity are caught and concentrated in magic pencil strokes."

Many of his subjects, like the Golden Stairs, are purely decorative and for that reason particularly ideal in treatment. The drawing of the human form is wonderfully well done. The scene as a whole has an archaic effect, like the use of ancient forms of words by a writer. They seem to carry us into times and scenes when people lived lives far different from our own. This picture represents a winding procession descending a stairway—perhaps to some beautiful religious festival. The movement of the figures and the grace of the curving lines is like the grace and movement of a song.

Burne-Jones is classed among the Pre-Raphaelites, but free from the extravagances of that school of art. In 1881 he received from Oxford the honorary degree of D.C.L., and in 1885 was elected President of the Royal Birmingham Society of Artists and made an Associate of the Royal Academy of Arts, London. The latter he resigned in 1893 when he became one of the founders of the New Gallery, where, and at the Grosvenor Gallery, in the British metropolis, most of his pictures were first exhibited.

The Swimming Boys, by Sorolla



©*Hispanic Society of America* Joaquin Sorolla y Bastida (Spanish, 1863)

THE work of Sorolla has been compared, for the strong suggestion of movement, to the work of one of the Italian Old Masters, Botticelli. Sorolla paints boys and girls as Botticelli paints his swift nymphs and the wind-gods. In both there is the joy of motion and the suggestion of the rush and tingle of the life of youth. These boys are as nimble as little frogs and as unconscious as the frogs that there is anything in life to feel sad about. There is no posing, there are no artificial attitudes in Sorolla. These boys are not swimming as some painter might imagine boys should swim in order to be most graceful, but they are kicking about with the impulse of the moment and the skill acquired by long practice. And even in this reproduction in black and white, you can realize that one of Sorolla's distinctions is his ability to reproduce on canvas the brilliant sunshine playing through the blue waters of the Mediterranean. Some one has said you can even taste the salt of the sea and feel its bracing winds when looking at Sorolla's canvases. Of course, to do this you must give your imagination full play.

Sorolla, beside being given high rank by the critics, is also very popular with people who have never made a study of art. This picture, as well as another called "The Bath" representing little girls splashing about in the water in brilliant sunshine, always attracts visitors at the Metropolitan Museum of Art in New York City, where the originals of both pictures are to be seen.

Like Murillo and Velasquez, a Spaniard by birth, Sorolla received his art education in his native town, Valencia, and in Paris and Rome. His first great success was "Another Margaret" which was awarded a gold medal in Madrid. His reputation grew rapidly and he was soon given the first rank among living Spanish painters. His "Fishermen's Return," first shown to the public at the Paris Salon, was purchased by the French government for the Museum of the Luxemburg.

In recognition of the merit of the works he showed at the Paris Exposition of 1900 he was made a Knight of the Legion of Honor, and in 1906 an officer of the Legion.

"IN THE PAGES OF GOOD BOOKS LIES THE MAGIC TO INSPIRE OUR DREAMS AND THE POWER TO MAKE THOSE DREAMS COME TRUE"